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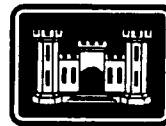
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**NL/TARACORP  
SUPERFUND SITE  
GRANITE CITY, ILLINOIS**



**Prepared for**

**U.S. Department of the Army  
Corps of Engineers, Omaha District  
Omaha, Nebraska**

**March, 1993**

**Woodward-Clyde** 

**Woodward-Clyde Consultants  
2318 Millpark Drive  
St. Louis, Missouri 63043**

**WCC Project No. 89MC114V**

# A-E DAILY QUALITY CONTROL REPORT

DATE 11-4-91DAY 

S	<del>M</del>	T	W	Th	F	S
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WEATHER	<del>Partly Sun</del>	Clear	Overcast	Rain	Snow
TEMP	To 32	<del>32-50</del>	50-70	70-85	85-100
WIND	Still	<del>Light</del>	High	Report No.	
HUMIDITY	Dry	<del>Moist</del>	Humid		

COE PROJECT MANAGER TERRY BUCHOLTZ  
 PROJECT NUTRACORP  
 JOB NO. 87C9023 89MC114V  
 CONTRACT NO. 0021

## SUB-CONTRACTORS ON SITE:

INORDWARD - CLYDE CONSULTANTS HUB TEAM #2

## EQUIPMENT ON SITE:

HAB KIT

## WORK PERFORMED (INCLUDING SAMPLING):

SAMPLED 1602 MAPLE6 SAMPLES FOR TOTAL LEADDECLONNED EQUIPMENT IAW SOP 6ABANDONED BORING IAW SOP 7SAMPLED 1610 MAPLE6 SAMPLES FOR TOTAL LEADDECLONNED EQUIPMENT IAW SOP 6ABANDONED BORING IAW SOP 7SAMPLED 1622 MAPLE6 SAMPLES FOR TOTAL LEADDECLONNED EQUIPMENT IAW SOP 6ABANDONED BORING IAW SOP 7SAMPLED 1640 MAPLE6 SAMPLES FOR TOTAL LEADDECLONNED EQUIPMENT IAW SOP 6ABANDONED BORING IAW SOP 7

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NL/TARACORP

REPORT NO. \_\_\_\_\_

OSNO 89 MC114V

DATE 11/4/91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MODIFIED LEVEL D

PERSONNEL & EQUIPMENT DESIGN

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

WALTER GROOMAN, PHOTOGRAPHER FROM BELLEVILLE NEWS DEMOCRAT  
NEWSPAPER CAME ON TO SITE TO ADD AN ARTICLE TO THE PAPER.  
HE TOOK ~3 ROLLS OF PICTURES.

TOMORROW'S EXPECTATIONS

SAMPLE

1643, 1644, 1647, AND 1648 MAPLE STREET

BY WENDY REINBOLT

TITLE STREET BUG



(SAMPLE FORMAT)

ER 1110-1-263  
1 Oct 90

## A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Bucholtz  
PROJECT NL/Tara Corp  
JOB NO. 89 Mc114V  
CONTRACT NO. 0021

DATE	<u>11-4-91</u>						
DAY	S	M	T	W	Th	F	S
		X					
WEATHER	Bright Sun	Clear X	Overcast	Rain	Snow		
TEMP	To 32	32-51 X	50-70	70-85	85-100		
WIND	Still	Light X	High	Report No.			
HUMIDITY	Dry	Moist X	Humid	1-1			

SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants HAB team 2

EQUIPMENT ON SITE:

HAB kit

WORK PERFORMED (INCLUDING SAMPLING):

Sampled 1713 Maple St. @ 1720 Maple St. E 17th  
18 samples for total lead  
Decombed equipment IAW Sep #6  
Abandoned Boring IAW Sep #7

SHEET 1 OF 2

FIGURE NO 2

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NL / Tracor

REPORT NO 1-1

JOB NO 89 McH4V

DATE 4 Nov. 91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level D  
Personnel & Equipment decon.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

Visited by Granite City Community Action  
Committee.

TOMORROW'S EXPECTATIONS

Maple  
Sample Adams Street 1600-1700 1700 block  
20 20

BY John Hendon TITLE Staff Scientist

(SAMPLE FORMAT)

ER 1110-1-263  
1 Oct 90

## A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Bucholtz  
PROJECT NL / Tara Corp  
JOB NO. 89 MC114 ✓  
CONTRACT NO. 0027

DATE 5 Nov. 91

DAY 

S	M	T	W	TH	F	S
		X				

WEATHER	Bright Sun	Clear X	Overcast	Rain	Snow
TEMP	To 32	32-59 X	50-70	70-85	85 up
WIND	Still	Light X	High	Forecast No.	
HUMIDITY	Dry	Moist X	Humid	2-1	

### SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants - HAB Team 2

### EQUIPMENT ON SITE:

HAB Kit

### WORK PERFORMED (INCLUDING SAMPLING):

Sampled 1730, 1738, 1739, 1741, 1742, 1747  
36 samples for total lead.

Decanned equipment IAW SOP #6.  
Abandoned boring IAW SOP #7.  
Sampled IAW SOP #1.

SHEET \_\_\_\_ OF \_\_\_\_

FIGURE NO 2

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NL/Toracorp

REPORT NO. 2-2

JOB NO. 89MC114V

DATE 5 Nov. 91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level D  
Personnel & Equipment decontaminated.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Sample Maple St. E to Olive St.

BY Kim Dledar TITLE Staff Scientist

(SAMPLE FORMAT)

ER 1110-1-263  
1 Oct 90

## A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCKHOLTZ  
PROJECT 8<sup>th</sup> NLTRACORP  
JOB NO. 89MC114V  
CONTRACT NO. \_\_\_\_\_

DATE	<u>11/5/91</u>						
DAY	S	M	T	W	TH	F	S
			X				
WEATHER	Brght Sun	Clear	Overcast	Rain	Snow		
			X				
TEMP	<del>70-80</del>	<del>50-60</del>	50-70	70-85	85-100		
	X	X					
WIND	Still	Light	High	Report No.			
		X					
HUMIDITY	Dry	Light	Humid	2-2			
		X					

SUB-CONTRACTORS ON SITE:

WOODWARD-CLYDE CONSULTANTS HAB TEAM 2

EQUIPMENT ON SITE:

HAB KIT

WORK PERFORMED (INCLUDING SAMPLING):

SAMPLED 11643 MARLE, 11644 MARLE, 11648 MARLE, 11601 OLIVE,  
11625 OLIVE, AND 11629 OLIVE

6 SAMPLES EACH HOUSE (TOTAL 36 SAMPLES) TOTAL LEAD

DELON PROCEDURES FOR SOP 6

SAMPLING PROCEDURES FOR SOP 1

SAMPLE LABELING FOR SOP 5

BUREAU ABANDONMENT FOR SOP 7

SAMPLED 11647 MARLE

3 SAMPLES TOTAL LEAD

DELON PROCEDURES FOR SOP 6

SAMPLING PROCEDURES FOR SOP 1

SAMPLING LABELING FOR SOP 5

BUREAU ABANDONMENT FOR SOP 7

SHEET \_\_\_\_\_ OF \_\_\_\_\_

FIGURE NO 2

1 Oct 90

PROJECT NUTRACORP

REPORT NO

(Continuation Sheet)

2-2

JOB NO. 89 MC 114V

DATE 11/5/91

### QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

## HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MODIFIED LEVER "D"

**PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:**

1647 MAPLE'S BACKYARD WAS ALL SIDEWALK AND GARDEN -- NO  
SAMPLE TAKEN IN BACKYARD

SPECIAL NOTES. <sup>5-42</sup> ~~CRAFT TRAPDOOR VISITED SITE~~

CHARLES KIZONA (NTH CONSULTANTS) AND STEVE MOLT (NL INDUSTRIES)  
VISITED SITE.

**TCMCARROWS EXPECTATIONS:**

1634, 1636, 1638, 1640, 1639, OLIVE STREET AND E21, <sup>W48</sup> E34  
W48 INTERSECTIONS AND STOPS ON CHRISTIAN STREET

BY Henry E. Rumbolt TITLE STAFF ENG

(SAMPLE FORMAT)

ER 1110-1-263

1 Oct 90

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Bucholtz  
PROJECT NL/TraCorp  
JOB NO. 87 MCLH4V  
CONTRACT NO. 002 I

DATE	<u>11-6-91</u>						
DAY	S	M	T	W	Th	F	S
				X			
WEATHER	Bryt Sun	Clear	Overcast	Rain	Snow		
			X				
TEMP	To 32	32-50	50-70	70-85	85 up		
		X					
WIND	Sl	Mod	Hgh	Report No.			
		X					
HUMIDITY	Dry	Mod	Hgh	3-2			
		X					

## SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants HAB Trans

## EQUIPMENT ON SITE:

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled 1744 Maple St. & 1712, 1713, 1717, 1724, 1744 Olive.  
45 for total lead.

Decommed equipment IAW Sep #6,  
Abandoned boring IAW Sep #7  
Sampled IAW Sep #7.

3 samples for lead duplicate G&H  
3 samples for matrix spike G&H  
3 samples for matrix spike duplicates G&H

SHEET 1 OF 2

FIGURE NO 2

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NL/Tarmac

REPORT NO. 3-1

JOB NO. 89MCL114V

DATE 11-6-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Mod: Fred level D  
Personnel & equipment decon.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Sample Olive St. <sup>GLH</sup> Spruce STREET

BY L. J. Shuler TITLE Staff Scientist



ER 1110-1-283  
1 OCT 90

DATE 11/6/91

CAY	S	L	T	<del>X</del>	TH	F	S
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WEATHER	Bright Sun	Clear	Overcast X	Rain	Snow
TEMP	To 32	32-60 X	50-70	70-85	85 up
WIND	Still	Light X	High	Report No. 3-2 2-3 etc	
HUMIDITY	Dry	Moist X	Humid X		

COE PROJECT MANAGER TERRY BUCKWALT  
PROJECT NLTAC+CORP  
JOB NO. 89MC114V  
CONTRACT NO. \_\_\_\_\_

**SUB-CONTRACTORS ON SITE:**

WOODWARD-CLYDE CONSULTANTS PMB TERM #2

**EQUIPMENT ON SITE.**

**HAB KIT**

**WORK PERFORMED (INCLUDING SAMPLING):**

SAMPLED 2 LOCATIONS AT THE FOLLOWING HOUSES:

1639 OLIVE, 1634 OLIVE, 1636 OLIVE, 1640 OLIVE, 1631 1731

CHESTNUT, 17.35 CHESTNUT, 17.39 CHESTNUT, AND 17.28 CHESTNUT.

\* AT EACH <sup>NEW</sup> EXPOSED ADDRESS, 4 SAMPLES WERE TAKEN (TOTAL 48 SAMPLES)

SAMPLED AT 1 LOCATION AT THE FOLLOWING NUMBER:

1638 045E

\* AT 1638 DIVE TOOK 3 ~~300~~<sup>452</sup> SAMPLES TOTAL

\* SAMPLES WERE TAKEN JAN SEP 1

\* DELON WAS DONE FROM 3/21/64

\* SAMPLE LOADING WAS DONE ROW 505

BURONG ABANDONMENT LAW 917

\*TOTAL SAMPLES IS 51.

EF 1110-1-263  
1 OCT 90

(Continuation Sheet)

PROJECT N/L/TARACORP

REPORT NO. 3-2

JOB NO. 89 MC 114V

DATE 11/6/91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MODIFIED LEVEL "D"

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROWS EXPECTATIONS:

CHESTNUT (1714, 1715, 1718, 1719, 1723) AND (1747, 1750, AND  
1743 CHESTNUT)

BY Wally E. Rabolt

TITLE SRP ENG

(SAMPLE FORMAT)

ER 1110-1-263  
1 Oct 90

DATE 11-7-91

DAY 

S	M	T	W	Th	F	S
				X		

## A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHOLTZ  
PROJECT NL/TARACORP  
JOB NO. 89MC114V  
CONTRACT NO. 0021

WEATHER	Bright Sun	Clear	Overcast X	Rain	Snow
TEMP	Te 32 X	32-50	50-70	70-85	85 up
WIND	Still	Light X	High	Report No.	
HUMIDITY	Dry	Light X	Humid	4-1	

### SUB-CONTRACTORS ON SITE:

WOODWARD - CLYDE CONSULTANTS HAB TEAM #1.

### EQUIPMENT ON SITE:

HAB KIT

### WORK PERFORMED (INCLUDING SAMPLING):

SAMPLED 1648, 1638, 1626, 1634 SPRUCE  
STREET.

24 SAMPLES FOR TOTAL LEAD.

SAMPLES TAKEN IAW SOP #1.

ABANDONED BORINGS IAW SOP #7.

EQUIPMENT AND PERSONNEL

DECONED IAW SOP #6.

SHEET 1 OF 2

FIGURE NO 2

ER 1110-1-263  
1 Oct 90

PROJECT NL / TARACORP

REPORT NO 4-1 (Continuation Sheet)

JOB NO. 89MC114V

DATE 11-7-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MODIFIED LEVEL D

PERSONNEL AND EQUIPMENT DECON

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

DUE TO COLD TEMPS DECON WAS SLOWED DUE TO  
SOME FREEZING OF D.I. WATER.

ALSO SNOW SLOWED THE SAMPLING PROCESS AND  
LOCATING OF BORING SITES.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS: SAMPLE SPRUCE 1732, 1744, 1754  
AND OLIVE 1719, 1720, 1721

BY Moody Mallene TITLE FIELD TECHNICIAN

(SAMPLE FORMAT)

ER 1110-1-263

1 Oct 90

A-E DAILY QUALITY  
CONTROL REPORT

COE PROJECT MANAGER TERRY BUCKWOLD  
 PROJECT NL/TARACORP  
 JOB NO. 89MC114V  
 CONTRACT NO. 0021

DATE 11/7/91

DAY	S	M	T	W	TH	F	S
					X		

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
			X		X
TEMP	10-22	22-30	50-70	70-85	65-10
	X				
WIND	SE	MOOR	HIGH	FACON NO.	
		X			
HUMIDITY	Dry	MOOR	WET	4-2	
			X		

## SUB-CONTRACTORS ON SITE:

WOODWARD CLYDE CONSULTANTS LHA TEAM 2

## EQUIPMENT ON SITE:

LHA KIT

## WORK PERFORMED (INCLUDING SAMPLING):

SAMPLED:1714 CHESTNUT6 TOTAL LEAD SAMPLES3 LEAD DUPLICATE SAMPLES1715 CHESTNUT6 TOTAL LEAD SAMPLES3 MATRIX SPIKE3 MATRIX SPIKE DUPLICATE1718 CHESTNUT6 TOTAL LEAD SAMPLES3 LEAD MATRIX SPIKE3 LEAD MATRIX SPIKE DUPLICATE1719 CHESTNUT6 TOTAL LEAD SAMPLES3 LEAD DUPLICATESTOTAL 42 SAMPLESALL SAMPLING RAW SUP 1ALL RECON RAW SUP 6ALL SAMPLE LABELING SUP 5ALL RECORD ABANDONMENT RAW SUP 7

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

SUBJECT NL/TPRACORP

REPORT NO 4-2

SNO 89 MC114V

DATE 11/2/91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MODIFIED LEVEL "0"

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

TEMPERATURE ABOUT 25° F -- ALL DECON WATERS FREEZE,  
COLD TOLERANCE IS LESSENED - TAKES MORE TIME TO DO  
WORK.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

CHESTNUT (1750, 1743, 1723, 1747) AND NEEDLEPOINTE  
(821 AND 834).

BY WENDY REDWALT TITLE STAFF ENG

DATE November 8, 1991DAY 

S	M	T	W	Th	<input checked="" type="checkbox"/>	S
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A-E DAILY QUALITY  
CONTROL REPORTCOE PROJECT MANAGER Terry Buchholz  
PROJECT NL / Taracorp  
JOB NO. 89MCL14V  
CONTRACT NO. 0021WEATHER 

Brief Sun	<input checked="" type="checkbox"/> Clear	Overcast	Rain	Snow
TEMP	<input checked="" type="checkbox"/> 32-50	50-70	70-85	85-100
WIND	<input checked="" type="checkbox"/> Still	Light	High	Report No.
HUMIDITY	<input checked="" type="checkbox"/> Dry	Moist	Humid	<u>5</u>

## SUB-CONTRACTORS ON SITE:

WCC HAB teamsEQUIPMENT ON SITE. HAB Kits

## WORK PERFORMED (INCLUDING SAMPLING):

- No Sampling was performed.
- Cleaning and Maintenance on Equipment & Building was performed.
- Meeting between HAB teams and myself was held to clean up <sup>internal</sup> procedural changes since beginning of field work and to clarify points.

SHEET 1 of 2

PROJECT NL / Taracorp  
JOB NO. 89MC114 V

REPORT NO. 5  
DATE November 8, 1991

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Level D

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Extreme Cold temperatures in morning (below 25°F)  
prevented sampling. Weekly maintenance & cleaning of  
equipment & vehicle was performed & HAB crews went home early.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Monday HAB team #1 SPRUCE 1732, 1744, 1754; Olive 1719, 1720;  
1721 CHERRY 1642  
HAB team #2 CHESTNUT: 1750, 1743, 1723, 1747;  
Neiderhous 821, 834; WALNUT 1717, 1721

BY Shaggy Hagerty TITLE Senior Staff Engineer



(SAMPLE FORMAT)

ER 1110-1-263  
1 Oct 90

## A-E DAILY QUALITY CONTROL REPORT

CCE PROJECT MANAGER TERRY BUCHWALD  
PROJECT ML/TARACORP  
JOB NO. 89MC114V  
CONTRACT NO. 0021

DATE	<u>11/11/91</u>						
DAY	S	M	T	W	TH	F	S
		X					
WEATHER	Brief Sun	Clear X	Overcast	Rain	Snow		
TEMP	To 32	27-50 X	50-70	70-85	85-100		
WIND	Stl X	Mod	Hgh	Floor No.			
HUMIDITY	Dry	Mod X	Humid	6-2			

### SUB-CONTRACTORS ON SITE:

WOODWARD - CLYDE CONSULTANTS LAB TEAM #2

### EQUIPMENT ON SITE:

HAB KIT

### WORK PERFORMED (INCLUDING SAMPLING):

#### SAMPLED

• 1747 CHESTNUT, 1743 CHESTNUT, 1750 CHESTNUT, 1723  
CHESTNUT, 821 NEEDLEBUSH, 834 NEEDLEBUSH, 1717  
WALNUT, AND 1721 WALNUT

• 16 SAMPLES EACH (TOTAL 48) TOTAL LEAD SAMPLES

• 1750 CHESTNUT, AND 821 <sup>WAL</sup>CHESTNUT NEEDLEBUSH

• ALSO HAD 3 LEAD DUPLICATE SAMPLES EACH

• 3 LEAD QA1 SAMPLES EACH

• 3 LEAD MATRIX SPIKE SAMPLES EACH

• 3 LEAD MATRIX SPIKE DUPLICATE SAMPLES  
EACH

• 1723 CHESTNUT

• ALSO HAD 3 LEAD DUPLICATE SAMPLES EACH

• 3 LEAD QA SAMPLES EACH

• TOTAL SAMPLES = 78

ER 1110-1-263  
1 OCT 90

(Continuation Sheet)

QUEST NL/TARACORP

REPORT NO 6-2

SNO 89MC114V

DATE 11/11/91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MODIFIED LEVEL "D" PROTECTION

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

COMPARISONS EXPECTATIONS

ADAMS (1930, 1938, 1942) AND BENTON (1943, 1939, 1937, 1930, 1928)

BY Wendy E. Rabbit TITLE STAFF ENG

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Bucholtz  
 PROJECT NL/Tarmac  
 JOB NO. 89MC 114V  
 CONTRACT NO. 0021

DATE 11-11-91  
 DAY 

S	M	T	W	Th	F	S
	X					

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
			X		
TEMP	To 32	32-50	50-70	70-85	85 to
		X			
WIND	Still	Light	High	Report No.	
		X		6-1	
HUMIDITY	Dry	Moist	Humid	4-1	
		X		22	

## SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants HAB Team 1

## EQUIPMENT ON SITE:

HAB kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled Olive 1719, 1720, 1721 & Spruce 1732  
1754, 1744, Maple 1607, Cleveland 1642, Dehar 1634

Decommed equipment IAW sep #6.  
Abandoned boring IAW Sep #7.  
Sampled IAW Sep #1.

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NL/Teracore REPORT NO. 6-1  
JOB NO. 89MC114V DATE 11-11-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Mod: Small level D  
Personnel & Equipment decontaminated

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Sample Debris - 1703, 1704, 1707  
1643, 1644, 1717, 1728  
Cleveland - 1704, 1708, 1710

BY [Signature] TITLE Staff Scientist

A-E DAILY QUALITY  
CONTROL REPORT

COE PROJECT MANAGER Terry Bucholtz  
 PROJECT NL/Tankcorp  
 JOB NO. 81 MC114V  
 CONTRACT NO. 002A

DATE 11-12-91  
 DAY 

S	M	T	W	Th	F	S
		X				

WEATHER	Brght Sun	Clear	Overcast X	Rain	Snow
TEMP	To 32	32-50 X	50-70	70-85	85-100
WIND	SE	Windy X	Hgt	Report No.	
HUMIDITY	Dry	Wet X	Humid	7-2	

## SUB-CONTRACTORS ON SITE:

Woodward-Clydes Consultants HAB Team 7

## EQUIPMENT ON SITE:

HAB Kit.

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled 1704, 1708, 1710 Cleveland, Delmar  
1728, 1717, 1704, 1643, 1644, 1763

Decommed equipment EAW SOL #6

Abandoned barge EAW SOL #7

Sampled EAW SOL #1

60 SAMPLES FOR TOTAL LHD

12 SAMPLES FOR QA

QA SAMPLES TAKEN FROM CLEVELAND 1708, 1710

DELMAR 1728, 1704, 1643

EP 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NL/Taxcoip REPORT NO. 7-1  
JOB NO. 87MC114V DATE 11-12-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level.  
Personnel & Equipment Documented

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS.

Sample PELMAR 1747  
EDISON 1704 1709 1715  
CLEVELAND 2215  
BENTON 2248 2252 2254 2258  
2123.

BY X. J. Henderson TITLE Staff Scientist

(SAMPLE FORMAT)

ER 1110-1-263  
1 Oct 90A-E DAILY QUALITY  
CONTROL REPORTCOE PROJECT MANAGER TERRY BUCKHOLTZ  
PROJECT 89 MC114U  
JOB NO. NLTRACORP  
CONTRACT NO. 0021DATE 11/12/91  
DAY 

S	M	T	W	Th	F	S
		X				

WEATHER 

Bright Sun	Clear	Overcast	Rain	Snow
		X	X	

  
TEMP 

To 32	32-50	50-70	70-85	85-100
	X			

  
WIND 

Still	Light	Mod	Report No.
X			

  
HUMIDITY 

Dry	Mod	Humid	7-2
		X	

## SUB-CONTRACTORS ON SITE:

WOODWARD-CLYDE CONSULTANTS HAS TEAM #2

## EQUIPMENT ON SITE:

HAS KIT

## WORK PERFORMED (INCLUDING SAMPLING):

SAMPLED

- 1928 BENTON, 1930 BENTON, 1943 BENTON, 1939 BENTON, 1937 BENTON, 1942 ADAMS, 1938 ADAMS, AND 1930 ADAMS
- 16 SAMPLES LEAD (TOTAL SAMPLES = 48)

- 1928 BENTON, 1943 BENTON, 1938 ADAMS
- 3 SAMPLES LEAD RA (TOTAL 9 SAMPLES)

- ALL SAMPLES TAKEN TOW SOP 1

- ALL OTHERS DONE TOW SOP 6

- ALL SAMPLE LABELING TOW SOP 5

- ALL COREING ABANDONMENT ~~AT~~ <sup>USE</sup> TOW SOP 7

SHEET 1 OF 2

FIGURE NO 2

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NL/TORACORP

REPORT NO. 7-2

JOB NO. 89 MC 114N

DATE 11/12/91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MODIFIED LEVEL "D"

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS.

(1927, 1911, 1918) BENTON, 2034 ADAMS, CLEVELAND (1919,  
1930, 1934, 1938) NIEDERMEYER (1255)

BY Wendy R. Kell TITLE STAFF ENG



(SAMPLE FORMAT)

ER 1110-1-263  
1 Oct 90

## A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERREY BUCKHOLZ  
PROJECT 89MC114V  
JOB NO. NL/TARACDRP  
CONTRACT NO. 0021

DATE 11/13/91  
DAY 

S	M	T	W	TH	F	S
			X			

WEATHER 

Brght Sun	Clear X	Overcast	Rain	Snow
--------------	------------	----------	------	------

  
TEMP 

To 32	32-50	50-70	70-85	85-100
		X		

  
WIND 

Still	Light X	High	Report No.	
-------	------------	------	------------	--

  
HUMIDITY 

Dry	Light X	Humid	8-2	
-----	------------	-------	-----	--

### SUB-CONTRACTORS ON SITE:

WOODWARD - CLYDE CONSULTANTS <sup>WER</sup> TEAM HAB TEAM 2

### EQUIPMENT ON SITE:

HAB KIT

### WORK PERFORMED (INCLUDING SAMPLING):

#### • SAMPLED

• 1911 BENTON, 1918 BENTON, 1927 BENTON, 2034  
ADAMS, 1938 CLEVELAND, 1934 CLEVELAND, 1930  
CLEVELAND, 1919 CLEVELAND AND 1255 NIEDERTINGHAUS  
• 6 SAMPLES TOTAL LEAD EACH (TOTAL 54)

• 1930 CLEVELAND AND 1255 NIEDERTINGHAUS

• 3 SAMPLES QA (TOTAL 6)

• ALL SAMPLING WAS DONE DAW SDP 1

• ALL SAMPLE LABELING WAS DONE DAW SDP 5

• ALL DECOR WAS DONE DAW SDP 6

• ALL BORING ABANDONMENT WAS DONE DAW SDP 7

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

SUBJECT NL/TARA CORP

REPORT NO 8-2

SNO 89MC114V

DATE 11/13/91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

ADOPTED LEVEL "D" PROTECTION

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

COMPARISON EXPECTATIONS

CLEVELAND (2027, 2029, 2032, 2055) & WASHINGTON  
(2027, 2033, 2038, 2040)

BY WENDY REYNOLD TITLE STAFF ENG

A-E DAILY QUALITY  
CONTROL REPORTDATE 11-13-91  
DAY 

S	M	T	W	TH	F	S
			X			

WEATHER 

Brief Sun	Clear X	Overcast	Rain	Snow
--------------	------------	----------	------	------

  
TEMP 

To 32	32-50 X	50-70	70-85	85 up
-------	------------	-------	-------	-------

  
WIND 

Stl	Moist X	High	Record No. 8-1	
-----	------------	------	-------------------	--

  
HUMIDITY 

Dry	Moist X	Humid		
-----	------------	-------	--	--

COE PROJECT MANAGER Terry Bucholtz  
PROJECT NL/Toracorp  
JOB NO. 89 MC114U  
CONTRACT NO. 0027

## SUB-CONTRACTORS ON SITE:

Woodward-Clupe Consultants HAD Team 7

## EQUIPMENT ON SITE:

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled - 1704 Edison, 1709 & 1715 Edison  
Cleveland 2215, Benton 2254, 2258 & 2157, 2122 - Total - 48  
Delmar 1747 - only one bearing - 3 samples lead  
Benton 2248 - " " - 2 samples " " } Total lead -  
2252 " " 3 " " } 9 samplesTotal samples for QA - 6 -Edison 1104Cleveland 2215Discarded equipment & personnel IAW Sop #6.  
Abandoned bearing IAW Sop #7.  
Sampled IAW Sop #2.

PROJECT NL/Toracorp  
JOB NO. 89MC114V

REPORT NO 8-1  
DATE 11-13-71

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level D  
Personnel & Equipment clean.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS.

Sample Benton 2121, 2131, 2133, 2148, 2157,  
2158, 2228, 2230, 2232, Madison 2017, 2023,  
Grand 1918.

BY KW Shuler TITLE Staff Scientist

A-E DAILY QUALITY  
CONTROL REPORT

COE PROJECT MANAGER Terry Bucholtz  
 PROJECT NL/Torcorp  
 JOB NO. 87MC114V  
 CONTRACT NO. 0021

DATE 11-14-91  
 DAY 

S	M	T	W	Th	F	S
				X		

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
			X		
TEMP	To 32	32-50	50-70	70-85	85 up
			X		
WIND	Still	Light	High	Report No.	
		X			
HUMIDITY	Dry	Moist	Humid		
		X			

## SUB-CONTRACTORS ON SITE:

Woodward-Clayton Consultants HAD Team 2

## EQUIPMENT ON SITE:

HAD KIT

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled -  
20 Benton - 2228, 2230, 2232, 2158,  
2157, 2133, 2121, 2131

Grand 1918.

Madison 2017, 2023.

Total # for lead - 66.

Decomposed granite IAW Sept 6.  
Abandoned boring IAW Sept 7.  
Sampled IAW Sept 7.

QA samples - Total # 6.

Benton 2121, 2131

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NL / Torrap

REPORT NO. 9-1

JOB NO. 89 MC114V

DATE 11-14-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Mod. P. level D  
Personnel & Equipment decreased

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Sample Adams St. 2108, 2120,  
2134, 2138, 2144, 2150.

BY Shirley Pled TITLE Staff Scientist

(SAMPLE FORMAT)

ER 1110-1-263  
1 Oct 90

## A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHNITZ  
PROJECT NL/TARACORP  
JOB NO. 89MC114V  
CONTRACT NO. 0021

DATE 11/14/91  
DAY 

S	M	T	W	TH	F	S
				X		

WEATHER 

Bright Sun	Clear	Overcast	Rain	Snow
			X	

  
TEMP 

To 32	32-50	50-70	70-85	85 to
		X		

  
WIND 

Still	Light	High	Report No.	
X			9-2	
Dry	Moist	Humid		
		X		

  
HUMIDITY

### SUB-CONTRACTORS ON SITE:

WOODWARD - CLYDE CONSULTANTS HAS AT TEAM #2

### EQUIPMENT ON SITE:

HAB KIT

### WORK PERFORMED (INCLUDING SAMPLING):

- SAMPLED WEL
- 2027 CLEVELAND, 2029 CLEVELAND, 2055 CLEVELAND,  
2032 CLEVELAND, 2027 WASHINGTON, 2033 WASHINGTON,  
2040 WASHINGTON, AND 2038 WASHINGTON
- 12 TOTAL LEAD SAMPLES EACH (TOTAL 48)
- 2027 WASHINGTON AND 2040 WASHINGTON
- 3 LEAD QUALITY ASSURANCE SAMPLES EACH  
(TOTAL 6 SAMPLES)
- ALL SAMPLING DONE DAW SDP 1
- ALL SAMPLE LABELING DONE DAW SDP 5
- ALL DECO DONE DAW SDP 6
- ALL BORING ABANDONMENT DONE DAW SDP 7
- SAMPLED 2027 CLEVELAND
- 3 SAMPLES TOTAL LEAD (TOTAL 3)

ER 1110-1-263  
1 Oct 90

PROJECT AL/TORACORP

REPORT NO

Continuation Sheet

8 9-2

DB NO 89MC114V

DATE 11/14/91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MODIFIED LEVEL "D" PROTECTION

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

LEE (2143, 2151, 2161, 2029, 2037, 2045, 2047)

BY WENDY PATRICK TITLE STAFF ENG



(SAMPLE FORMAT)

ER 1110-1-263

1 Oct 90

# A-E DAILY QUALITY CONTROL REPORT

DATE

DAY

S	M	T	W	Th	<input checked="" type="checkbox"/>	S
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WEATHER

Bright Sun	Clear	<input checked="" type="checkbox"/> Overcast	Rain	Snow
Temp	To 32	32-50	50-70	70-85
Wind	Still	Light	High	Report No.
Humidity	Dry	Moist	Humid	1-DR

COE PROJECT MANAGER

PROJECT

JOB NO.

CONTRACT NO.

SUB-CONTRACTORS ON SITE:

EQUIPMENT ON SITE:

WORK PERFORMED (INCLUDING SAMPLING):

- Decontamination of Drill rig & Drilling equipment.
- Drilling & sampling of TR 0010 Bore hole.
- collected 7 soil samples for analytical analyses
- collected 6 soil samples for geo technical analyses.

SHEET 1 OF 1

FIGURE NO 2

PROJECT NL TAPACURP

REPORT NO. \_\_\_\_\_

JOB NO. 89MC114V

DATE 11-15-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

N/A

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level - D  
Trucks, Hard Hat safety glasses,  
steel toe boots, rubber gloves.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Decom procedures between exclusion &  
support zones.

Action: implement an additional  
tub with water & scrub brush  
20 Decom boots & work gloves

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS.

Begin drilling and sampling  
borehole TR 0009 and perhaps  
2-3 more boreholes. Which need  
to be determined Monday.

BY Ray Sauer SR. STAFF  
TITLE Geologist

(SAMPLE FORMAT)

ER 1110-1-263  
1 Oct 90

## A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHOLTZ  
PROJECT NL/FARACORP  
JOB NO. 89MC114V  
CONTRACT NO. 0021

DATE 11/15/91  
DAY 

S	M	T	W	TH	F	S
					X	

WEATHER	Brief Sun	Clear	Overcast	Rain	Snow
			X		
TEMP	To 32	32-50	50-70	70-85	85-100
			X		
WIND	Still	Light	Mod	Forecast No.	
	X				
HUMIDITY	Dry	Mod	Humid	10-2	
			X		

### SUB-CONTRACTORS ON SITE:

WOODWARD-CLYDE CONSULTANTS HAS TEAM # 2

### EQUIPMENT ON SITE:

HAB KIT

### WORK PERFORMED (INCLUDING SAMPLING):

- SAMPLED 2029 LEE, 2037 LEE, 2045 LEE, 2047 LEE, 2143 LEE, 2157 LEE, 2161 LEE
- 10 TOTAL LEAD SAMPLES EACH (TOTAL 30)
- SAMPLED 2161 LEE
- 3 TOTAL LEAD SAMPLES
- SAMPLED 2161 LEE, 2045 LEE
- 3 TOTAL LEAD DUPLICATE SAMPLES EACH (TOTAL 6)
- SAMPLED 2029 LEE, 2045 LEE, 2157 LEE
- 3 LEAD QUANTITY ASSURANCE SAMPLES (TOTAL 9)
- ALL SAMPLING DONE IAW SOP 1
- ALL SAMPLE LABELING DONE IAW SOP 5
- ALL DECON DONE IAW SOP 6
- ALL <sup>HAB</sup> DECONTAMINATION <sup>HAB</sup> BORING ABANDONMENT IAW SOP 7

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NL/TARACORP

REPORT NO. 10-2

SNO 89MC114V

DATE 11/15/91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

IMPOSED LEVEL "0" PROTECTION

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

2161 LEE HAD A ROCK COVERED FRONT YARD & TOOK  
ONLY ONE SAMPLE

SPECIAL NOTES.

CMCROW'S EXPECTATIONS

105 LEE, WASHINGTON (2005, 2034, 2104) MADISON  
(2021) GRAND (1923, 2149) DELMAR & 20<sup>th</sup>, CLEVELAND  
(1929)

BY WENDY REDWALT TITLE STAFF ENG

A-E DAILY QUALITY  
CONTROL REPORTDATE 10-15-91  
DAY 

S	M	T	W	TH	F	S
					X	

WEATHER 

Bright Sun	Clear	Overcast	Rain	Snow
		X		

  
TEMP 

To 32	32-50	50-70	70-85	85-100
		X		

  
WIND 

Still	Light	High	Report No.	
X			10-1	
Dry	Moist	Humid		
		X		

  
HUMIDITYCOE PROJECT MANAGER TERRY BUCHOLTZ  
PROJECT NL/TARACORP  
JOB NO. 89 MC114V  
CONTRACT NO. 0021

## SUB-CONTRACTORS ON SITE:

WOODWARD-CLYDE CONSULTANTS HAB TEAM #1

## EQUIPMENT ON SITE:

HAB KIT

## WORK PERFORMED (INCLUDING SAMPLING):

SAMPLED 2148 BENTON  
2108, 2120, 2134, 2138, 2152,  
2144 ADAMS  
4537 SAMPLES FOR TOTAL LEAD  
6 SAMPLES FOR QA FROM  
2120 AND 2138 ADAMS.  
SAMPLES TAKEN IAW SOP #1  
BORINGS ABANDONED IAW SOP #7  
PERSONNEL & EQUIPMENT DECONED IAW SOP #6.  
2108 ADAMS ONLY FRONT YARD  
WAS SAMPLED DUE TO DENSE TREES  
AND GRAVEL IN BACK YARD.  
6 SAMPLES FOR LD TAKEN FROM 2120 AND  
2138 ADAMS.SHEET 1 of 2

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NL/TARACORP

REPORT NO. 10-1

JOB NO. 89MC114V

DATE 11-15-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MODIFIED LEVEL D

PERSONNEL & EQUIPT DECONED.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TCMCORROWS EXPECTATIONS:

1627, 1635, 1639, 1707 EDISON

1628, 1732 DELMAR

2156, 2160 ADAMS

BY Mark Mallow TITLE FIELD TECHNICIAN

Figure 2 (Continued)

ER 1110-1-263  
1 Oct 90

DATE 11-18-91

CITY 

S	M	T	W	TH	F	S
	X					

WEATHER 

Bright Sun	Clear X	Overcast	Rain	Snow
------------	------------	----------	------	------

TEMP 

To 32	32-50	50-70 X	70-85	85 to
-------	-------	------------	-------	-------

WIND 

Still	Moder	High 10-30 mph	Report No.	
Dry	Moder X	Humid		

HIDITY

COE PROJECT MANAGER \_\_\_\_\_  
PROJECT NL/TARACORP  
JOB NO. 29 MC114 V  
CONTRACT NO. \_\_\_\_\_

SUB-CONTRACTORS ON SITE: Layne-Western Drilling.

EQUIPMENT ON SITE. Acker drill rig  
steam cleaner, Grout mixer.

WORK PERFORMED (INCLUDING SAMPLING): Drilled & sampled TROO9,  
TROO8, TROO7, and TROO6.

- Collected 7 analytical soil samples  
per Borehole location.
- Collected 6 Geotechnical soil samples  
per Borehole location.
- Collected 1 sample for MS/MSD  
from TROO6
- collected 2 samples for QA  
from TROO7, and TROO8
- Collected 1 duplicate QC.  
from TROO7 (4-6)
- Collected QA for geotechnical  
TROO8 & TROO7

SHEET 3 OF 3

PROJECT NL/T2-2 CORP

REPORT NO. \_\_\_\_\_

JOB NO. 89 MC 114

DATE 11-18-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level-D, Hard hat, gloves, steel  
toed boots, safety glasses

- Steve Currell (Lynne western) driller's helper  
sprained wrist.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Tape to wrist to prevent further  
swelling.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS.

Grout - up TR-0006  
drill & sample TR-0005, TR0008.  
TR0003 and hopefully TR0002

BY Lynne Darrow TITLE sr. staff geologist



A-E DAILY QUALITY  
CONTROL REPORT

COE PROJECT MANAGER Terry Buchholtz  
 PROJECT NL/Tacacorp  
 JOB NO. 89MCHV  
 CONTRACT NO. 0022

DATE 11-18-91

DAY 

S	M	T	W	Th	F	S
	X					

WEATHER 

Brgt Sun	Clear	Overcast	Rain	Snow
		X		

TEMP 

To 32	32-50	50-70	70-85	85-100
		X		

WIND 

Still	Light	High	Report No.	
	X			

HUMIDITY 

Dry	Moist	Humid	11-2	
	X			

## SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants HAB Team 2

## EQUIPMENT ON SITE:

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled - Madison - 2021 Washington  
2008, 2036, 2104, Grand 1923, 2149 Edison 1627, 1635  
1639, 1704 Adams St - 2156, 2165  
6 SAMPLES EACH FOR TOTAL LEAD - ST. 48.  
SAMPLED - WASHINGTON 2036  
3 SAMPLES FOR TOTAL LEAD

## QA samples -

Madison - 2021 - 3 samples  
Grand - 1923 - 3 samples  
Edison - 1635 - 3 samples } Total - 9.

Decommissioned equipment IAW Sep #6  
Abandoned boring IAW Sep #7  
Sampled IAW Sep #4

## Lead Dip -

Edison - 1635 - 3 samples (total)

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NL/Teracorp

REPORT NO. 11-7

JOB NO. 89ML114V

DATE 11-8-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level D  
Personnel & Equipment deemed

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Sample - Adams 2156, 2160  
Elizabeth 1920, 1918, 1725, 1723, 1717, 1715  
1711, 1709A, 1707, 1703, 1609,  
Reynolds 1136.

BY Skidder TITLE Staff Scientist

A-E DAILY QUALITY  
CONTROL REPORT

COE PROJECT MANAGER TERRY BUCKHOLTZ  
 PROJECT NL/ PARACORP  
 JOB NO. 89 MC 114 V  
 CONTRACT NO. 0021

DATE 11-19-91

DAY	S	M	<input checked="" type="checkbox"/>	W	TH	F	S
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WEATHER	Bright Sun	Clear <input checked="" type="checkbox"/>	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70 <input checked="" type="checkbox"/>	70-85	85-100
WIND	Still	Light <input checked="" type="checkbox"/>	High	Report No.	
HUMIDITY	Dry <input checked="" type="checkbox"/>	Moist	Humid	12-7	

SUB-CONTRACTORS ON SITE: WOODWARD CLYDE CONSULTANTSEQUIPMENT ON SITE. HAB KIT

## WORK PERFORMED (INCLUDING SAMPLING):

SAMPLED ELIZABETH 1715, 1717, 1725  
Greenwood 1001, Elizabeth 1703, 1707, 1711, 1712

Total lead - 35.24

One boring - Elizabeth 1723 - (Frontyard)  
Elizabeth 1920 - (backyard) Total - 9  
Elizabeth 1918 - (backyard)

Matrix Spike & Matrix Spike Dup.Elizabeth 1920 - 6 total samples.

Abandoned boring IAW Sop #6.  
Decommissioned personnel & equipment IAW Sop #7.  
Sampled ~~at~~ IAW Sop. #1.

SHEET 1 of 2

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NL/Taracorp

REPORT NO. 12-2

JOB NO. 89MC1141

DATE 11-19-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level 1  
Decon equipment & personnel

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Sample - Washington, 911, 917, 919, 921, 813,  
1001, 1029, 1203

BY Sheldene TITLE Staff Scientist

(SAMPLE FORMAT)

ER 1110-1-263  
1 Oct 90A-E DAILY QUALITY  
CONTROL REPORTDATE 11-19-91  
DAY 

S	M	T	W	Th	F	S
		X				

WEATHER 

Brght Sun	Clear	Overcast	Rain	Snow
		X	X	

  
TEMP 

To 32	32-50	50-70	70-85	85-100
	X			

  
WIND 

Still	Light	High	Report No.	
	X			

  
HUMIDITY 

Dry	Moist	Humid		
		X		

COE PROJECT MANAGER \_\_\_\_\_  
PROJECT UL / TARACORP  
JOB NO. 89 MC114V  
CONTRACT NO. \_\_\_\_\_

SUB-CONTRACTORS ON SITE:	<u>Layne - Western Co.</u>
EQUIPMENT ON SITE:	<u>Acker - Drill Rig.</u> <u>Steam cleaner, grout mixer.</u>
WORK PERFORMED (INCLUDING SAMPLING):	<u>Drilled &amp; sampled TROUS, TROUO2</u> <u>&amp; grouted TROUO6.</u>  <u>- collected 2 analytical soil samples</u> <u>from TROUS</u> <u>- collected 2 analytical soil samples from</u> <u>TROUO2</u> <u>- collected 1 analytical duplicate</u> <u>(Lead dup from TROUO2 (13'-15'))</u>  <u>- collected 1 QA sample from</u> <u>TROUOX5 from (7'-8')</u> <u>CPP 11/20/91</u> <u>- collected 6 geotech. samples</u> <u>from TROUO5</u>  <u>- collected 6 geotech samples</u> <u>from TROUO2</u>  <u>- collected 1 geotech QA</u> <u>from TROUO5 (from 6'-8')</u>

SHEET \_\_\_\_ OF \_\_\_\_

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT

ML/TARACORP

REPORT NO

JOB NO.

DATE

11-19-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level-D

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

shut down from 14:00 - 15:00 due  
to heavy rain and some lightning.

- resumed work after rain let-up and  
lightning stopped

SPECIAL NOTES.

I.F. Rain. Rain suits to be worn  
underneath trucks.

TOMORROW'S EXPECTATIONS:

Drill 6 sample TROOD 1  
TROOD 3 and TROOD 4

BY

Ray Davis

TITLE

sr. staff  
geologist

(SAMPLE FORMAT)

ER 1110-1-263  
1 Oct 90

## A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHMALTZ  
PROJECT NL/TAPACORP  
JOB NO. 89MC114V  
CONTRACT NO. 0021

DATE	<u>11/20/91</u>						
DAY	S	M	T	W	TH	F	S
				X			
WEATHER	Brcf Sun	Clear	Overcast	Rain	Snow		
			X	X			
TEMP	To 32	32-50	50-70	70-85	85-100		
		X					
WIND	Still	Modest	High	Record No.			
		X					
HUMIDITY	Dry	Modest	High	13-2			
			X				

### SUB-CONTRACTORS ON SITE:

WOODWARD-CLYDE CONSULTANTS HAB TEAM #2

### EQUIPMENT ON SITE:

HAB KIT

### WORK PERFORMED (INCLUDING SAMPLING):

#### \* SAMPLED

1409 KENNEDY, 1322 KENNEDY, 1220 KENNEDY, 1211  
KENNEDY, 1112 KENNEDY, 1111 KENNEDY

16 SAMPLES TOTAL LEAD EACH (TOTAL 36)

\* ALL DECON DONE INW SOP 1

\* ALL SAMPLING DONE INW SOP 1

\* ALL SAMPLE LABELING DONE SOP 5

\* ALL BORING ABANDONMENT INW SOP 7

SHEET 1 OF 2

FIGURE NO 2

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NL/TBACORP

REPORT NO. 13-2

JOB NO. 89MC114V

DATE 11/20/91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MODIFIED LEVEL "D" PROTECTION

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

\* AT 1616 KENNEDY, A CHAD WAS IN BACK YARD WITH  
PADLOCK ON GATE - OWNER NOT HOME. TOOK 2 SAMPLES  
BUT NONE IN BACK YARD (2 SIDE YARDS) SEE FIELD  
BOOK

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

GREENWOOD (940, 1006, 1009, 1014, 1018, 1024, 1036)

BY WENDY REYNOLDS TITLE STAFF ENG



(SAMPLE FORMAT)

ER 1110-1-263  
1 Oct 90

DATE 11-24-91

DAY 

S	M	T	W	Th	F	S
			X			

## A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Bucholtz  
PROJECT NL / Tara Corp  
JOB NO. 89MC114V  
CONTRACT NO. 0022

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
TEMP	70-72	72-59	50-70	70-85	85 up
WIND	Still	Light	High	Report pp. 136-141	
HUMIDITY	Dry	Moist	Humid	12-2	

### SUB-CONTRACTORS ON SITE:

Woodward Clyde Consultants

### EQUIPMENT ON SITE:

HAB Kit

### WORK PERFORMED (INCLUDING SAMPLING):

Sampled - Washington 911, 917, 919, 921, 813  
1001

Total Lead samples - 36

Decommissioned equipment IAW Sep #6  
Abandoned Boring IAW Sep #7  
Sampled IAW Sep #4

SHEET 1 OF 2

FIGURE NO 2

ER 1110-1-263  
1 Oct 90

PROJECT <u>NL/Tarapur</u>		REPORT NO. <u>12-7</u>
JOB NO. <u>89AC114V</u>		DATE <u>11-20-91</u>
QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)		
HEALTH AND SAFETY LEVELS AND ACTIVITIES.		
<u>Modified Level D</u>		
<u>Personnel &amp; Equipment decon.</u>		
PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:		
SPECIAL NOTES.		
TOMORROW'S EXPECTATIONS:		
<u>Sample - Grand</u> <u>1309</u> <u>1312</u> <u>1318</u> <u>1323</u> <u>23</u>		
<u>1325</u> <u>1009</u> <u>1020</u> <u>1105</u> <u>21</u>		

BY Ko Hude TITLE Staff Scientist

Figure 2 (Continued)

(SAMPLE FORMAT)

ER 1110-1-263  
1 Oct 90

K.L.E

DATE 11-20-91DAY 

S	M	T	W	TH	F	S
			X			

A-E DAILY QUALITY  
CONTROL REPORTCOE PROJECT MANAGER \_\_\_\_\_  
PROJECT NL/TARACORP  
JOB NO. 89 MC 114 V  
CONTRACT NO. \_\_\_\_\_WEATHER 

Bright Sun	Clear	Overcast	Rain	Snow
		X	X	

  
TEMP 

To 32	32-50	50-70	70-85	85 up
	X			

  
WIND 

Still	Moder	High	Report No.	
	X			

  
HUMIDITY 

Dry	Moder	Humid		
		X		

SUB-CONTRACTORS ON SITE: Layne - Western Drilling Co.EQUIPMENT ON SITE. Acker Drill Rig, Steam cleaner  
grout mixer

## WORK PERFORMED (INCLUDING SAMPLING):

- Drilled and sampled Boreholes in TRUST 459 site  
TR0001, TR0003, TR0004- Drilled & sampled Borehole in Rich. v. 1  
Property RO.0001- Collected Lead duplicate from TR0004 from  
Collected Quality Assur. sample from TR0004 @  
- Collected Geotechnical Quality Ass. from TR0004 @  
- Collected Motory spike / spike dup. from TR0003  
@ (13'-15')- Collected Quality Assur. from TR0003 @ (4'-6')  
- Collected Geotechnical Quality Ass. from TR0003 @  
(8'-10')- Collected Lead duplicate from TR0001 @ (13'-15')  
- Collected Quality Ass. from TR0001 @ (4'-6')  
- Collected Geotechnical Quality Ass. @ TR0001  
from (6'-8')SHEET 36

FIGURE NO 2

ER 1110-1-263  
1 Oct 90

NC / TARACORP

(Continuation Sheet)

PROJECT 89MC114V

REPORT NO. \_\_\_\_\_

JOB NO. 89MC114V

DATE 11-20-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level-D

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

constant rain / drizzle. caused hammer-  
rip to be soaked  
Logan - Western to bring spare back up  
exp.

SPECIAL NOTES.

N/A

TOMORROW'S EXPECTATIONS:

complete drilling & sampling  
Rich oil property set-up & commence  
on BUEG property.

BY Joyce Davis sr. staff.  
TITLE geologist

(SAMPLE FORMAT)

ER 1110-1-263  
1 Oct 90

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Bucholtz  
PROJECT ML Tanager p  
JOB NO. 89MC114V  
CONTRACT NO. 0021

DATE 11-21-91  
DAY 

S	M	T	W	TH	F	S
				X		

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
		X			
TEMP	To 32	32-50	50-70	70-85	85 up
		X	X		
WIND	Still	Moder	High	Report No. 1466H	
		X			
HUMIDITY	Dry	Moder	Humid	11-1	
		X			

## SUB-CONTRACTORS ON SITE:

Wardworth-Clyde Consultants

## EQUIPMENT ON SITE:

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled - Grad 1309, 1312, 1318, 1325, 1323  
1105, 1009, 1020

Total lead samples - 48

Decommed Personnel & Equipment EAW Sep #6.  
Abandoned boring EAW Sep #7.  
Sampled EAW Sep #1.

SHEET 1 OF 2

FIGURE NO 2

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT. NL/Taracorp REPORT NO. 13-7  
JOB NO. 89MC114V DATE 11-2-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified level 2,  
Disconnect equipment & personnel.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Sample - Iowa 812, 816, 820  
825, 967, 912, 913, 801

BY Kendall TITLE Staff Scientist

(SAMPLE FORMAT)

ER 1110-1-263

1 Oct 90

DATE 11/21/91

DAY 

S	M	T	W	TH	F	S
				X		

## A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCKHOLTZ  
PROJECT 89MC114V  
JOB NO. NL/TAGACORP  
CONTRACT NO. 0021

WEATHER 

Bright Sun	Clear	Overcast	Rain	Snow
X	X			

  
TEMP 

To 32	32-50	50-70	70-85	85 up
		X		

  
WIND 

Still	Moder	High	Report No.	
X				

  
HUMIDITY 

Dry	Moder	Humid	14-2	
	X			

### SUB-CONTRACTORS ON SITE:

WOODWARD - CLYDE CONSULTANTS HAS TEAM #2

### EQUIPMENT ON SITE:

HAB KIT

### WORK PERFORMED (INCLUDING SAMPLING):

#### • SAMPLED

• 1014 GREENWOOD, 1018 GREENWOOD, 1036 GREENWOOD,  
1024 GREENWOOD, 940 GREENWOOD, 1009 GREENWOOD,  
1006 GREENWOOD

• 6 SAMPLES TOTAL LEAD EACH (42 TOTAL)

• ALL SAMPLING DONE TAW SUP 1

• ALL SAMPLE LABELING DONE TAW SUP 5

• ALL DECEN DONE TAW SUP 6

• ALL BREING ABANDONMENT DONE TAW SUP 7

SHEET      OF     

FIGURE NO 2

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NL/TDRACORP

REPORT NO. 14-2

JOB NO. 89MC111V

DATE 11/21/91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MAINTAINED LEVEL "D" PROTECTION

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

USE  
GRU REYNOLDS (1016, 1024, 1030, 1032)

BY WENDY REINBOLT

TITLE STAFF ENG



1 Oct 90

A-E DAILY QUALITY  
CONTROL REPORTDATE 11-21-91  
DAY 

S	M	T	W	TH	F	S
				X		

WEATHER 

Brght Sun	Clear	Overcast	Rain	Snow
		✓	✓	

  
TEMP 

To 32	32-50	50-70	70-85	85-100

  
WIND 

SE	Mod	Hgt	Report No.	
✓				

  
HUMIDITY 

Dry	Mod	Humid		
	✓			

COE PROJECT MANAGER \_\_\_\_\_  
PROJECT NL/TARACORP  
JOB NO. 89MC1144  
CONTRACT NO. \_\_\_\_\_SUB-CONTRACTORS ON SITE: Layne-Western Drilling Co.EQUIPMENT ON SITE. Acker Drill Rig. steam cleaner  
grout mixer.

## WORK PERFORMED (INCLUDING SAMPLING):

- Completed drilling on the Rich Oil  
site - drilled 1 sample RO0002- Set-up and drilled in the BUEG  
Property. drilled and sample  
BV0001 & BV0002- Collected 7 soil samples for Analytical testing  
on RO0001- Collected 1 sample for QA testing @ (4-6')  
RO0002 { - Collected 2 samples for Matrix spike  
& Matrix spike dup. @ (8-10')BV0001 { - Collected 7 soil samples for Analytical testing  
Collected 1 sample for Quality Assurance @ (8-10')  
Collected Lead duplicate @ (4-6')  
Collected Matrix spike & Matrix spike dup  
@ (13-15')- Collected 1 Quality Ass. sample from  
BV0002 @ (4-6')

SHEET \_\_\_\_ OF \_\_\_\_

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NL/TARACORP

INVESTIGATOR

JOB NO 89MC119V

DATE 11-21-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level-D.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN

None

SPECIAL NOTES. on Borehole BU 0002 there is approx 12'  
of fill matl. overlying natural material

TOMORROW'S EXPECTATIONS. Complete drilling @ the  
BUG Location. Borehole 0003  
- drill three Geotechnical Boreholes  
on the Taracorp site

BY Jorge Sauer TITLE Geologist see staff

Figure 2 (Continued)

1 Oct 90

A-E DAILY QUALITY  
CONTROL REPORT

COE PROJECT MANAGER Terry Buchalte  
 PROJECT NL/Teraco-p  
 JOB NO. 89MC114V  
 CONTRACT NO. 0022

DATE 11-22-91  
 DAY 

S	M	T	W	Th	F	S
					X	

WEATHER 

Bright Sun	Clear	Overcast	Rain	Snow
		X		

  
 TEM 

60-72	72-80	80-90	70-85	85-100
	X			

  
 WIND 

Still	Light	High	Report No.	
	X			

  
 HUMIDITY 

Dry	Moist	Humid		
	X			

## SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants

## EQUIPMENT ON SITE.

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled - State St. - 1102 816 <sup>4A</sup> 905 818  
 (18 total lead)

Lead Duplicates -

State St. - 1102 (3 total) } 6 total  
 816 (3)

Lead QA samples -

State St. - 1102 (3) } 6 total  
 816 (3)

Decommed Equipment & Personnel IAW Sop #6.  
Abandoned Drilling IAW Sop #7.  
Sampled IAW Sop #3.

SHEET 1 of 2

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT. NL / Terra Corp

REPORT NO. 14-1

JOB NO. 89MC114V

DATE 11-22-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Mod: Field Level 1b.  
Personnel & Equipment decon.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Sample - Ions 812, 816, 820, 825,  
823, 909, 912, 913

BY Shirley

TITLE Staff Scientist

A-E DAILY QUALITY  
CONTROL REPORTDATE 11-22-91

DAY

S	M	T	W	Th	<u>F</u>	S
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WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
		<u>X</u>			
TEMP	To 32	32-50	50-70	70-85	85 up
			<u>X</u>		
WIND	Stl	Moder	Hgt	Report No.	
	<u>X</u>				
HUMIDITY	Dry	Moder	Humid		
		<u>X</u>			

COE PROJECT MANAGER \_\_\_\_\_

PROJECT

NL/TARA CORP

JOB NO.

29MC119V

CONTRACT NO. \_\_\_\_\_

SUB-CONTRACTORS ON SITE:

Lyne - Western Co.

EQUIPMENT ON SITE.

Acker drill rig, steam clean  
grout-mixer.

WORK PERFORMED (INCLUDING SAMPLING):

- Completed drilling on the BUT G site  
drillhole BU-0003
- collected 7 analytical soil samples
- collected 1 Quality Ass. sample  
from (4-6')
- Drilled and sampled three geotechnical  
boreholes in the TARA-CORP site.  
TA-0001, TA0002, & TA0003.
- collected 6 geotechnical soil  
samples from each borehole for a  
total of 18 samples.
- Topped-off the Boreholes from  
previous days to surface.

SHEET \_\_\_\_ OF \_\_\_\_

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NL/TARACORP

REPORT NO. \_\_\_\_\_

JOB NO. 89 MC114V

DATE 11-22-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

modified Level-D.  
- Driller & driller's helper wore air  
sampling pumps during the duration  
of work activities

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

Engine-Watson to gather  
well material & supplies.  
for Monday.

TOMORROW'S EXPECTATIONS:

Begin drilling monitoring  
well on the TRUST 954 site

BY

Ray Davis

TITLE

Sr. Staff  
Geologist

DATE 11/22/91

DAY	S	M	T	W	TH	F	S
						X	

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHALTZ  
PROJECT NL/TARACCRP  
JOB NO. 89MC114V  
CONTRACT NO. 2021

WEATHER	Bright Sun	Clear X	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70 X	70-85	85 up
WIND	Still X	Modest	High	Report No.	
HUMIDITY	Dry X	Modest	Humid	15-2	

**SUB-CONTRACTORS ON SITE:**

WOODWARD - CLYDE CONSULTANTS HAS TEAM # 2

EQUIPMENT ON SITE.

HAB KIT

**WORK PERFORMED (INCLUDING SAMPLING):**

- SAMPLED

• 10116 REYNOLDS, 10332 REYNOLDS, 10340 REYNOLDS, 10266 REYNOLDS,  
2156 ADAMS, 2160 ADAMS, 2151 <sup>BENTON</sup> ADAMS, 2163 <sup>BENTON</sup> ADAMS,  
AND 2221 CLEVELAND

• 300 6 samples total lead each (total 54)

• 1016 REYNOLDS AND 1032 REYNOLDS

• 3 LEAD QUANTITY ASSURANCE SAMPLES (TOTAL 6)

- 1016 REYNOLDS

• 3 LEAD DUPLICATE SAMPLES (TOTAL 3)

\* ALL SAMPLING DONE DOW 3001

• ALL SAMPLING LABELING DONE TAW SUP 5

' ALL DECON DONE TAN SUPLO

\* ALL BOOKING ARRANGEMENT DONE TAW SOP 2

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT. NL/TARP CORP

REPORT NO. 15-2

JOB NO. 89MC114V

DATE 11/22/91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MODIFIED LEVEL "D" PROTECTION

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

ELIZABETH (1702A, 1711, 1703, 1707) REYNOLDS (1136, 1000)

KENNEDY (1702, 1706)

BY WENDY REYNOLDS TITLE TRF ERIE

2 of 2

Figure 2 (Continued)



1 Oct 90

DATE 11-26-91DAY 

S	M	<input checked="" type="checkbox"/>	W	Th	F	S
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A-E DAILY QUALITY  
CONTROL REPORT

COE PROJECT MANAGER

Terry Bucholtz

PROJECT

NL/Tankcorp

JOB NO.

87MC114V

CONTRACT NO.

0021

WEATHER

Bright Sun	Clear	Overcast	Rain	Snow
	<input checked="" type="checkbox"/>			
TEMP	To 32	32-50	50-70	70-85
		<input checked="" type="checkbox"/>		
WIND	Still	Light	High	Report No.
	<input checked="" type="checkbox"/>			
HUMIDITY	Dry	Moist	Humid	
	<input checked="" type="checkbox"/>			
				<u>14-2</u>

## SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants

## EQUIPMENT ON SITE:

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

Iowa:Sampled 13042, 1311, 1316, 1324, 1224Total for lead - 36Matrix spike - Iowa 13042-(3)  
1324-(3)Total - 6Matrix Spike Dsp. -Iowa 13042-(3)  
1324-(3)Total - 6Decommed Equipment & personnel IAW Sep #6.  
Abandoned Boring IAW Sep #7.  
Sampled IAW Sep #2.SHEET 1 OF 2

FIGURE NO 2

ER 1110-1-263

1 Oct 90

(Continuation Sheet)

PROJECT NL/Trip

REPORT NO. 14.1

JOB NO. 89MC114V

DATE 11-26-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Mod: Fred level D.

Personal equipment & personnel.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Sayale - (Out for Thanksgiving)

BY Karl Herda TITLE Staff Scientist

# A-E DAILY QUALITY CONTROL REPORT

DATE 11-25-91  
DAY 

S	M	T	W	TH	F	S
	X					

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
		X			
TEMP	10-22	22-30	30-70	70-85	85-100
	X				
WIND	Stl	Modr	Hght	Report No.	
	X				
HUMIDITY	Dry	Modr	Humid		
	X				

COE PROJECT MANAGER \_\_\_\_\_  
PROJECT NL / TARACORP  
JOB NO. 89MC1194  
CONTRACT NO. \_\_\_\_\_

SUB-CONTRACTORS ON SITE: Layne-Western Drilling Co.

EQUIPMENT ON SITE. CME-75 drilling  
steam cleaner, grout mixer

WORK PERFORMED (INCLUDING SAMPLING):  
set-up, Began drilling &  
logging monitoring well 103-D  
at the TRUST 450 site.

1 Oct 90

(Continuation Sheet)

PROJECT 2 NL/TARACORP

REPORT NO. \_\_\_\_\_

JOB NO. 89 MC114-V T-46DATE 11-25-91

## QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

None

## HEALTH AND SAFETY LEVELS AND ACTIVITIES.

modified - Level D Hard Hat, Tycks.  
rubber gloves, steel toed boots.

## PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

- Sands heaving inside the augers

Action: add water to prevent sands from  
heaving inside the augers.

- cold weather.

Action: dress properly.

## SPECIAL NOTES.

## TOMORROW'S EXPECTATIONS:

complete drilling  
collect sample from the screen interval.  
set well.

BY

David Danna

TITLE

Sr Staff  
Geologist

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCKWITZ  
PROJECT NL / TRACORP  
JOB NO. 89MCH4K  
CONTRACT NO. 0021

DATE 11/25/91  
DAY 

S	M	T	W	Th	F	S
	X					

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
TEMP	Te 32	32-50	50-70	70-85	85 Lo
WIND	Still	Moder	High	Report No.	
HUMIDITY	Dry	Moder	Humid	15-2	

## SUB-CONTRACTORS ON SITE:

WOODWARD-CLYDE CONSULTANTS HAB KIT # 2

## EQUIPMENT ON SITE.

HAB KIT

## WORK PERFORMED INCLUDING SAMPLING:

- SAMPLED 1711 ELIZABETH, 1709 ELIZABETH, 1703 ELIZABETH,
- 1707 ELIZABETH, 1000 REYNOLDS, 1136 REYNOLDS
- 6 SAMPLES TOTAL 1000 EACH (TOTAL 36)
- ALL SAMPLING DONE TOW 3001
- ALL SAMPLE LABELING DONE TOW 3005
- ALL RECON DONE TOW 3010
- ALL BORING ABANDONED TOW 3007

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT. 116/TARACORP

REPORT NO. 15-2

JOB NO. 89MC114V

DATE 11/25/91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MODIFIED LEVEL "D" PROTECTION

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

ELIZABETH (1606, 1609), ALTON (1218, 1220), GREENWOOD (1105;  
1108) REYNOLDS (1114, 1115)

BY W. EDWIN REDFERN TITLE STAFF ENG

Figure 2 (Continued)

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Bucholtz  
PROJECT NL/Torres  
JOB NO. 89ML114V  
CONTRACT NO. 0027

DATE	<u>11-25-91</u>						
DAY	S	M	T	W	TH	F	S
		X					
WEATHER	Bright Sun	Clear	Overcast	Rain	Snow		
		X					
TEMP	10-32	32-50	50-70	70-85	85-100		
	X						
WIND	Still	Moder	High	Record No.			
		X					
HUMIDITY	Dry	Moder	Humid	K1-2			
		X					

## SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants

## EQUIPMENT ON SITE:

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled - Tawa 813, 816, 820, 825  
909, 912

Total lead - 36

Decommed equipment: personnel IAW Sep #6.  
Abandoned Vibro IAW Sep #7.  
Sampled IAW Sep #1.

SHEET 1 of 2

(Continuation Sheet)

PROJECT AL/Terracorp

REPORT NO. 14-2

JOB NO. 89MC114K

DATE 11-25-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Mod-fresh Level D  
Demanded equipment & personnel.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Sample Iowa 1304, 1311, 1316, 1324,  
1224, 1230, 1235, 1238.

BY X. J. J. J. TITLE Staff Scientist





ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NL/TARACORP

REPORT NO. \_\_\_\_\_

JOB NO. \_\_\_\_\_

89MC1194

DATE

11-26-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

N/A

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

modified Level-D Chard hat, truck  
steel toed boots, Rubber gloves  
safety glasses

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

some problems installing slurry seal  
Action: deleted slurry seal to allow  
pumping down the hole.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

- grout ~~down~~ borehole from  
MW-103-D, install Bump-out  
& well protector.

BY

Yorge Sauer

TITLE

sr. staff  
geologist

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BICKHOLTZ  
PROJECT NL/TRECORP  
JOB NO. 89MC114V  
CONTRACT NO. 0021

DATE 11/26/91

OAY 

S	M	T	W	TH	F	S
		X				

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
		X			
TEMP	To 32	32-50	50-70	70-85	85-100
		X			
WIND	Still	Minor	High	Record No.	
		X			
HUMIDITY	Dry	Minor	Humid	16-2	
	X				

## SUB-CONTRACTORS ON SITE:

WOODWARD - CLYDE CONSULTANTS HAB TEAM # 2

## EQUIPMENT ON SITE:

HAB KIT

## WORK PERFORMED (INCLUDING SAMPLING):

### • SAMPLED

• 1606 ELIZABETH, 1609 ELIZABETH, 1218 ALTON, 1224 ALTON, 1114 REYNOLDS, 1108 GREENWOOD, 1105 GREENWOOD

• 6 SAMPLES TOTAL LEAD EACH (42 TOTAL)

• 1218 ALTON

• 3 SAMPLES LEAD MATRIX SPIKE (TOTAL 3)

• 1218 ALTON

• 3 SAMPLES LEAD MATRIX SPIKE DUPLICATE (TOTAL 3)

• ALL SAMPLING DONE IAW SOP 1

• ALL SAMPLE LABELING IAW SOP 5

• ALL DECON IAW SOP 6

• ALL BORING ABANDONMENT IAW SOP 7

PROJECT. NL/TARA CORP

REPORT NO. 16-2

JOB NO. 89 MC 114K

DATE 11/26/91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MODIFIED LEVEL "D" PROTECTION

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

1220 ALTRN WAS A HOUSE BUT WAS TAKEN DOWN 6 YRS AGO AND  
IS NOW PART OF 1218 ALTRN'S 1/2RD. WE HAD VERBON AGREEMENT  
TO ACCESS FROM 1224 ALTRN SO WE SAMPLED THERE

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

1200 ALTRN, 1033 MC CAMBRIDGE, 1920 12<sup>TH</sup>

BY WENDY REDBOLT TITLE STAFF ENG

(SAMPLE FORMAT)

ER 1110-1-263

1 Oct 90

DATE

11-27-91

DAY

S	M	T	W	TH	F	S
			X			

## A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER

PROJECT

NL/TA RACURP

JOB NO.

89MC114V

CONTRACT NO.

WEATHER

Brief Sun	Clear X	Overcast	Rain	Snow
--------------	------------	----------	------	------

TEMP

To 32	32-50	50-70 X	70-85	85-100
-------	-------	------------	-------	--------

WIND

Still X	Light	High	Report No.	
------------	-------	------	------------	--

HUMIDITY

Dry	Moist	Humid X
-----	-------	------------

SUB-CONTRACTORS ON SITE:

Clyde - Western Drilling Co.

EQUIPMENT ON SITE:

CME-75 Drill Rig  
stem cleaner, grout mixer

WORK PERFORMED (INCLUDING SAMPLING):

- completed grouting MW-03-D
- installed pump-out posts 3' radially apart
- installed well protection.

SHEET 1 of 1

FIGURE NO 2

PROJECT: NC/TA RA CURP REPORT NO. \_\_\_\_\_  
JOB NO. 89 MC 114 U DATE 11-27-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

N/A

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

mod. sed Level-D Hard Hat, safety glasses  
- steel toed Boots, Truck

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN

SPECIAL NOTES. Grout used 41 bags & cement (8716)  
2 bags Portland CR 16)  
and ~100 gal 6% water

TOMORROW'S EXPECTATIONS

- set-up go to Venice &  
drill & sample the Alluv.

BY L. J. Davis TITLE SR. STAFF  
Geologist

Figure 2 (Continued)

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCKWITZ  
PROJECT NL/TARACORP  
JOB NO. 89MC114V  
CONTRACT NO. 0021

DATE 11/27/91

DAY	S	M	T	W	TH	F	S
				X			

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
		X			
TEMP	To 32	32-50	50-70	70-85	85-100
		X			
WIND	Still	Light	High	Report No.	
		X			
HUMIDITY	Dry	Moist	Humid	17-2	
		X			

## SUB-CONTRACTORS ON SITE:

WOODWARD-CLYDE CONSULTANTS HAS TEAM #2

## EQUIPMENT ON SITE.

HAS KIT

## WORK PERFORMED (INCLUDING SAMPLING):

\* SAMPLED

\* 1200 ALTON, 1920 12<sup>th</sup>, 1033 McCAMBERGEE

\* 6 SAMPLES TOTAL LEAD EACH (TOTAL 18)

\* 3 SAMPLES LEAD QUANTITY ASSURANCE (TOTAL 9)

\* 3 SAMPLES LEAD DUPLICATE (TOTAL 9)

\* ALL SAMPLING DONE TAW SOP 1

\* ALL SAMPLE LABELING TAW SOP 5

\* ALL DECON DONE TAW SOP 6

\* ALL BORING ABANDONMENT DONE TAW SOP 7

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT. NL/TAMACORP

REPORT NO. 17-2

JOB NO. 89MCL14V

DATE 11/27/91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MODIFIED LEVEL "D" PROTECTION

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

819 MADISON, 1009 MADISON, 1230 MADISON

BY WENDY REINHART TITLE STAFF ENG

Figure 2 (Continued)



(SAMPLE FORMAT)

ER 1110-1-263

1 Oct 90

DATE 12-2-91

DAY S M T W TH F S

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Bucholtz  
PROJECT NLTL/Townsend  
JOB NO. 89MC14V  
CONTRACT NO. 0022

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
TEMP	70-82	32-50	50-70	70-85	85-100
WIND	SE	MOOR	HIGH	RADIATION	
HUMIDITY	Dry	MOOR	HUMID	19.1	

## SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants

## EQUIPMENT ON SITE:

HAB K.T.

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled - Iowa 801, 1002,

Total - 12.

Leak Duplicates - Iowa, 1002 (3) (total)

Lead Quality - Iowa, 1002 (3) (total)

Decommed equipment & personnel IAW Sup #AT 6.  
Abandoned boring IAW Sup #7  
Sampled IAW Sup #1.

ER 1110-1-263  
1 Oct 90

PROJECT NL/Terncorp REPORT NO 1985-2  
JOB NO 87MC114U DATE 12-2-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified level D.  
Desensitized equipment & personnel.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Sample - Fawn-1230, 1234, 1235, 1304,  
913, 1408  
Ground - 1307, 925

BY Karl Hede TITLE Staff Scientist

A-E DAILY QUALITY  
CONTROL REPORT

COE PROJECT MANAGER \_\_\_\_\_

PROJECT NL/TARA CORPJOB NO. 89 MC114V

CONTRACT NO. \_\_\_\_\_

DATE 12-2-91

DAY

S	M	T	W	Th	F	S
	X			X		

WEATHER

Brief Sun	Clear	Overcast	Fog	Snow
			X	X

TEMP

To 32 X	32-50	50-70	70-85	85-100
------------	-------	-------	-------	--------

WIND

24 X	10-20	20-30	30-40	40-50
---------	-------	-------	-------	-------

HUMIDITY

Dry	Moist	Humid	Very Humid
		X	

## SUB-CONTRACTORS ON SITE:

Lyne Western Drilling

## EQUIPMENT ON SITE:

CME-75 drill rig, stem cleaner,  
grout mixer, water tank trailer

## WORK PERFORMED (INCLUDING SAMPLING):

Union Laborer: install concrete pad  
1 set bumper-post around monitoring well  
100-D pad 2' x 3', bumper-post  
2" dia x 3' high with 2" in the  
ground

- drilled & sampled in the Venice alloys
- drilled & sampled 6 bore holes  
ranging in depth from 4' to 10'  
Needed to determine the vertical  
overburden thicknesses of pottery chips  
& fill material over natural native soil.

Collected 3 soil samples for Analytical  
sampling samples to be analyzed for  
TCLP total lead.

- samples collected from VE-0002 (0-2')
- VE-0004 (0-2')
- VE-0005 (4-6')

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT 89 MC / 7 HMC 0-1 P REPORTING 12-2-91

JOB NO. 89 MC 114V DATE 12-2-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

modified Level-D.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN

Automatic Hammer stopped working on drill rig.  
Action: switched to manual drive hammer.

- Rainy/cloud conditions.

Action: put on rain suits & dress properly.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Continue drilling & sampling in the  
various Allays.  
Will try a sample over 7 locations.

BY George Dumas TITLE SR. SLASH  
Geologist

A-E DAILY QUALITY  
CONTROL REPORT

COE PROJECT MANAGER Terry Bucholtz  
 PROJECT NL II/Taracoop  
 JOB NO. 29MCLH V  
 CONTRACT NO. 0021

DATE 12-2-91

DAY	S	M	T	W	TH	F	S
		X					

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
			X		
TEMP	To 32	32-50	50-70	70-85	85-100
	X				
WIND	Still	Moder	High	Report No.	
		X		19	
HUMIDITY	Dry	Moder	Humid	10-1	
		X		58	

## SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants

## EQUIPMENT ON SITE:

HMS K.T.

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled - Iowa 801, 1002,Total - 12.Leak Duplicates - Iowa, 1002 (3) (total)Leak Quality - Iowa, 1002 (3) (total)

Decommed equipment & personnel IAW Sop #AT 6.  
Abandoned boring IAW Sop #7  
Sampled IAW Sop #1.

ER 1110-1-263  
1 Oct 90

PROJECT. <u>NL/Terracorp</u>		REPORT NO. <u>1945-2</u>
JOB NO. <u>87MC114 V</u>		DATE <u>12-2-91</u>
QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)		
HEALTH AND SAFETY LEVELS AND ACTIVITIES.		
<u>Modified level D.</u>		
<u>Desecrated equipment &amp; personnel.</u>		
PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:		
SPECIAL NOTES.		
TOMORROW'S EXPECTATIONS:		
<u>Sample - Fawn-1230, 1214, 1235, 1304</u>		
<u>913, 1408</u>		
<u>Grand - 1327, 925</u>		

BY Kim Hled TITLE Staff Scientist

A-E DAILY QUALITY  
CONTROL REPORTDATE 12-3-91  
DAY 

S	M	T	W	TH	F	S
		X				

WEATHER 

Bright Sun	Clear	Overcast	Rain	Snow
		X		

  
TEMP 

To 32	32-50	50-70	70-85	85 up
X				

  
WIND 

Still	Moder	High	Report No.	
	X			

  
HUMIDITY 

Dry	Moder	Humid	20-7	
	X			

COE PROJECT MANAGER

Terry Bucholtz

PROJECT

NL Taracorp

JOB NO.

89MC114V

CONTRACT NO.

0027

## SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants

## EQUIPMENT ON SITE.

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled - Iowa - 1235, 1234, 1230, 1031,  
1122, 1124, 913, 1211, 1029,  
Total for lead - 12 to 54Lead Quality - Iowa - 1124 - (3) total  
Washington 1029 - (2) totalEquipment Personnel disconnected IAW Sep #6,  
Abandoned boring IAW Sep #7.  
Sampled IAW Sep #1.SHEET 1 of 2

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT. NL/Forecast

REPORT NO. 20-7

JOB NO. 89Mc114V

DATE 12-3-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified level D.  
Decommed equipment & personnel.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Sample - Work in office due  
to weather.

BY Karl Hilde TITLE Staff Scientist



# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHALTZ  
PROJECT NL/TARA CREP  
JOB NO. 89MC114V  
CONTRACT NO. 0021

DATE 12/3/91

DAY 

S	M	T	W	TH	F	S
		X				

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
			X		X
TEMP	10-22	22-50	50-70	70-85	85-100
	X				
WIND	Still	Moder	High	Report No.	
		X	X	20-2	
HUMIDITY	Dry	Moder	Humid		
		X			

## SUB-CONTRACTORS ON SITE:

WOODWARD - CLYDE CONSULTANTS HAS TEAM 2

## EQUIPMENT ON SITE:

HAS KIT

## WORK PERFORMED (INCLUDING SAMPLING):

- SAMPLED
- 1017 REYNOLDS, 1706 KENNEDY, 1702 KENNEDY, 819 MADISON, 1115 REYNOLDS, 1009 MADISON, 1230 MADISON, 1853 EDWARDSVILLE RD, 1863 EDWARDSVILLE RD
- SAMPLE 1, TOTAL LEAD SAMPLES EACH (TOTAL 54)
- 819 MADISON
- 3 LEAD QUALITY ASSURANCE SAMPLES EACH (3 TOTAL)
- ALL SAMPLING DONE TAW SOP 1
- ALL SAMPLE LABELING TAW SOP 5
- ALL SAMPLE PERON DONE TAW SOP 6
- ALL RECORDING ASSIGNMENT DONE TAW SOP 7

SHEET      OF

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)  
100 20-2  
REPORT NO. 89MCLHVV

PROJECT. NL/TARACORP

DATE 12/3/91

JOB NO. 89MCLHVV

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MODIFIED LEVEL "D" PROTECTION

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

"WORK IN DEPTH BECAUSE OF EXPECTED FREEZING  
WEATHER

BY WENDY FENBERT TITLE SUPER ENGR

Figure 2 (Continued)

ER 1110-1-263  
1 OCT 90

DATE: 12/3/91

DAY: 

S	M	T	W	Th	F	S
		X		X		

OTHER	Bright Sun	Clear	Overcast	Rain	Snow
			X		X
TEMP	To 32	32-50	50-70	70-85	85-100
	X				
WIND	Still	Light	High	Foggy No	
		X			
MOIST	Dry	Moist	Humid		

SUB-CONTRACTORS ON SITE: Layne-Western Drilling Co.

EQUIPMENT ON SITE: CME-75 drill rig, steam cleaner,  
grout mixer, water tank.

WORK PERFORMED (INCLUDING SAMPLING): - Drilled and sampled 12  
boring locations along the Venice Allys.  
VE-0007, VE-0008, VE-0009, VE-0000, VE-0001  
VE-0012, VE-0013, VE-0014 - VE-0015  
VE-0016, VE-0017, VE-0018.  
Collected 6 soil samples for TCLP Lead  
Collected 1 duplicate sample for TCLP Lead  
Collected 1 Q.A. sample for TCLP Lead.  
- collected sample VE-0008 (4-6') for TCLP Lead  
" " VE-0009 (0-2') for TCLP Lead  
collected duplicate VE-0009 (0-2') for TCLP Lead  
collected sample VE-0011 (0-2') for TCLP Lead  
Collected sample VE-0013 (0-2') for TCLP Lead  
Collected sample VE-0015 (2-4') for TCLP Lead  
collected Q.A. sample VE-0015 (2-4') for TCLP Lead  
collected sample VE-0017 (0-2') for TCLP Lead.

SHEET 1 of 1

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT. NL/T ARACORP REPORT NO. \_\_\_\_\_  
JOB NO. 89MC114-V DATE 12-3-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

- Collected Quality Assurance soil sample from UE-0015 for TCCP con and shipped to the Corp of Eng. in Omaha, Nebraska.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

modified Level-D. Had hot, safety glasses, steel toed boots, surgical gloves, under pressure glove.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

None.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Will complete drilling & sampling the Venice Allys.  
- take measurements from bench marks to locate burials on maps.

BY [Signature] TITLE Sr. Staff Geologist

(SAMPLE FORMAT)

ER 1110-1-263

1 Oct 90

112

DATE

12-7-91

DAY

S	M	T	W	TH	F	S
			X	X		

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER

PROJECT

NL/TARACORP

JOB NO.

89MC119V

CONTRACT NO.

WEATHER

Bright Sun	Clear	Overcast	Rain	Snow
	X			

TEMP

To 32	32-50	50-70	70-85	85 up
X				

WIND

Still	Light	High	Report No.	
X				

HUMIDITY

Dry	Moist	Humid
	X	

SUB-CONTRACTORS ON SITE:

Layne - Western Drilling Co.

EQUIPMENT ON SITE.

CME-75 drill Rig. water tank  
steam cleaner.

WORK PERFORMED (INCLUDING SAMPLING):

Completed sampling in Venice

IL.

Drilled & sampled the last two  
borings. VE-0019 & VE-0020 in  
slough Road.- Collected soil sample for  
TCLP lead from VE-0020 (012)

- Layne Western cleaned up - Demobed

- made sketches of the boring locations in  
slough Road & Alley East of 2nd  
st. & south of Hampton st.- Picked up set meter & calibration  
solutions for pH meter.

- Field paper work.

SHEET \_\_\_\_ OF \_\_\_\_

FIGURE NO 2

PROJECT NL/TARACORP REPORT NO. \_\_\_\_\_  
JOB NO. 89MC 114V DATE 12-4-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

*None*

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

*Modified Level-D during drilling & sampling activities.*

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

*None.*

SPECIAL NOTES.

*Arranged for Cygo-Western to bring equipment to surge & develop well MW-103-D*

TOMORROW'S EXPECTATIONS:

*SURGE Develop well MW-103-D collect. <sup>best</sup> quality ~~water~~ readings*

BY *George Doren* TITLE *sn staff Geologist.*



PROJECT NL/TARACORP REPORT NO. \_\_\_\_\_  
JOB NO. 89 MC114V DATE 12-5-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

calibrated pH-meter Cole Palmer-  
SCT meter YSI  
Water Quality meter Florida meter  
(turbidity meter)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

modified Level-D

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Could not get well water to clear-up  
Action. Alternate surging w/ surge block,  
move suction hose throughout the screen interval  
during pumping activities.  
used Bailer to surge well.

SPECIAL NOTES.

All the water quality parameters did  
stabilize with time.

TOMORROW'S EXPECTATIONS:

will check well to see if  
water has cleared up

BY George Danna TITLE sr. staff Geologist



# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Bucholtz  
PROJECT NL/TenCorp  
JOB NO. 89AC114K  
CONTRACT NO. 0021

DATE 12-5-91  
DAY 

S	M	T	W	TH	F	S
				X		

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85 up
WIND	Still	Light	High	Report No.	
HUMIDITY	Dry	Light	Humid	21-1	

## SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants

## EQUIPMENT ON SITE:

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled - Grand - 807, 808, 811, 820, 904,

911

Edison - 1717, 1707 (only 3 at 1707)

Total lead - 48, 45.

Lead Quality - Grand 808 - (3) total

Decommed equipment & personnel FAW Sp #6.  
Abandoned boiler IAW Sp #7.  
Sampled IAW Sp #7.

SHEET 1 OF 2

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NL / Tetracorp  
JOB NO. 89M-1141

REPORT NO. 21-7

DATE 12-5-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified level D.  
Decommed equipment & personnel.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Sample - Brgn - 2014, 2023,  
Ohio - 2014, 2018  
WT - 2504, 2508  
2510, 2617

BY 2600/2600 TITLE Staff Scientist

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHNITZ  
PROJECT NL/TARACORP  
JOB NO. 87MC114V  
CONTRACT NO. 0021

DATE 12/5/91  
DAY 

S	M	T	W	TH	F	S
				X		

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
		X			
TEMP	To 32	32-50	50-70	70-85	85 to
		X			
WIND	Still	Minor	High	Report No.	
			X	21-2	
HUMIDITY	Dry	Minor	Humid		
		X			

## SUB-CONTRACTORS ON SITE:

WOODWARD - CLYDE CONSULTANTS HAS TEAM # 2

## EQUIPMENT ON SITE:

HAB KIT

## WORK PERFORMED (INCLUDING SAMPLING):

- SAMPLED 2039 STATE, 1705 STATE, 2000 DELMAR, 2038 BENTON, 2125 BENTON, 0915 NIEDERUNGHAUS, 1247 NIEDERUNGHAUS
- 6 TOTAL LEAD SAMPLES EACH (TOTAL 42)
- 2039 STATE, 2000 DELMAR, 2038 BENTON, 1247 NIEDERUNGHAUS
- 3 LEAD QUALITY ASSURANCE EACH (TOTAL 12)
- 1247 NIEDERUNGHAUS
- 3 TOTAL LEAD DUPLICATES (TOTAL 3)
- ALL SAMPLING DONE JAN 3001
- ALL SAMPLE LABELING DONE JAN 3005
- ALL DECON DONE JAN 3006
- ALL BORING ABANDONMENT JAN 3007

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT. NL/TARACORP

REPORT NO. 21-2

JOB NO. 89MC114V

DATE 12/5/91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MODIFIED LEVEL "D" PROTECTION

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

1303 MADISON - A GRAVEL PARKING LOT - NO <sup>NO REGULAR</sup> ~~REGULAR~~ SOD  
- COULD NOT SAMPLE  
0915 NEEDLEHILLS - NO FRONT OR SIDE YARD - ONLY 1 ADDRESS DONE  
2038 BENTON - BACKYARD IS TILED AND CEMENT - SAMPLE TAKEN ONLY  
IN FRONT YARD

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

OLDIE (1642, 1646, 1647, 1648) SPRUCE (1614, 1602)  
NEEDLEHILLS (807, 830) EDISON (1726, 1729, 1733)

BY WENDY REINHOLD TITLE STAFF ENG

Figure 2 (Continued)

1 Oct 90

DATE 12/6/91DAY 

S	M	T	W	Th	<u>X</u>	S
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A-E DAILY QUALITY  
CONTROL REPORTCOE PROJECT MANAGER Terry Buchholz  
PROJECT NL/Taracorp Superfund Site  
JOB NO. 89MC114V  
CONTRACT NO. 0021

WEATHER	Bright Sun	Clear <u>X</u>	Overcast <u>X</u>	Rain	Snow
TEMP	To 32	32-50 <u>X</u>	50-70	70-85	85 to
WIND	Still	Light <u>X</u>	High	Report No.	
HUMIDITY	Dry	Moist <u>X</u>	Humid		

## SUB-CONTRACTORS ON SITE:

Layne - Western Drilling Co.EQUIPMENT ON SITE. CME-75 Drill Rig, Steam Cleaner, surge block pH meter, conductivity, temperature, and turbidity meter, water level indicator, centrifugal pump and submersible pump (electric)

## WORK PERFORMED (INCLUDING SAMPLING):

Development of Well 103-D. Name has been changed to Well # 103-91.Took water levelsSurge well with surge block. In CFP by hand.  
Install submersible pump at 31 ft.Start pumping at 4 gal per min for 20 minIncreased pump to 7 gal/min.Took pH, conductivity, temperature, turbidity and water level measurements every 5 minutes.Pumped a total of <sup>CFP</sup> 220 gallons from well during the day.SHEET 1 OF 2

PROJECT NL/Taracorp Superfund Site

REPORT NO. \_\_\_\_\_

DATE 12/6/91

JOB NO. 89MC14V

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Conducted Before and After <sup>Field</sup> Calibrations during day for pH, conductivity, temperature, and turbidity. See Calibration Field Log Book.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level "D"  
Decanned Equipment and Personnel

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Prior to pumping well to develop, was informed by Dave P. that the SOP says that we, or CPP were suppose to use a submersible pump for developed. Action Taken: Switched pump from centrifugal lift pump to electric submersible pump.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Finish development

BY Cynthia Pavella

TITLE Asst. Project Engineer

A-E DAILY QUALITY  
CONTROL REPORT

COE PROJECT MANAGER Terry Bucholtz  
 PROJECT NL/Tacwarp  
 JOB NO. 89MCH4V  
 CONTRACT NO. 0027

DATE 12-6-91  
 DAY 

S	M	T	W	TH	F	S
					X	

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
TEMP	Te 32	32-50	50-70	70-85	85 up
WIND	Still	Moderate	High	Report No.	
HUMIDITY	Dry	Moderate	Humid	22-1	

## SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants -

## EQUIPMENT ON SITE:

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled - Bryan - 2023, 2014

Ohio - 2018, 2014

W. 20th St. - 2504, 2508, 2510

Delmar - 1732

2612

Jefferson - 2002

Total lead - 600

Lead Dup - 2504 W. 20th St. (3) (total)

Matrix Spike Dup. - 2504 W. 20th St. (3) (total)

Decommed equipment: personnel FAW Sp#6,

Abandoned box FAW Sp#7.

Sampled FAW Sp#1

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT. NK/Terracorp REPORT NO. 22-7  
JOB NO. 89MCL14V DATE 12-6-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified level D.  
Decommed equipment & personnel

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Sample -  
Terra 12.38 148  
Grand - 1327 925  
WS - 811, 1013, 1203  
NK - 909, Cleared - 1929

BY Kim Bladen TITLE Staff Scientist

Figure 2 (Continued)



# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHOLTZ  
PROJECT AL / TRACORD  
JOB NO. 89MC114V  
CONTRACT NO. 0021

DATE 12/6/91

DAY 

S	M	T	W	TH	F	S
					X	

WEATHER	Brgt Sun	Clear	Overcast	Rain	Snow
		X			
TEMP	To 32	32-50	50-70	70-85	85 up
			X		
WIND	Still	Moder	Hgh	Report No.	
		X			
HUMIDITY	Dry	Moder	Humid	22-2	
		X			

## SUB-CONTRACTORS ON SITE:

WOODWARD-CLYDE CONSULTANTS HAS TEAM #2

## EQUIPMENT ON SITE:

HAB KIT

## WORK PERFORMED (INCLUDING SAMPLING):

- SAMPLED 11646 OLIVE, 11647 OLIVE, 1602 SPRUCE, 11614 SPRUCE, 0807 NIEDERBACHHAUS, 0830 NIEDERBACHHAUS,
- 16 SAMPLES OF TOTAL 1 ERO EACH (TOTAL 36)
- ALL SAMPLING DONE TAW SPP 1
- ALL SAMPLE LABELING TAW SPP 5
- ALL DECON DONE TAW SPP 6
- ALL BORING ABANDONMENT TAW SPP 7

SHEET      OF

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NL/TARACORP

REPORT NO. 22-2

DATE 12/6/91

JOB NO. 89MC114V

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

IMPROVED LEVEL "D" PROTECTION

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SEE FIELD BOOK

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

WER, AND RWS WILL BE <sup>WORKING</sup> ~~WORKED~~ ON OTHER JOBS.

BY WENDY REINHOLD TITLE STAFF ENG

Figure 2 (Continued)

1 Oct 90

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Buchholz  
 PROJECT NL/Tamcorp Superfund Site  
 JOB NO. 89MC114V  
 CONTRACT NO. 0021

DATE 12/9/91

DAY	S	M	T	W	TH	F	S
		X					

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
		X			
TEMP	To 32	32-80	50-70	70-85	85-100
		X			
WIND	Still	Light	High	Report No.	
		X			
HUMIDITY	Dry	Moist	Humid		
	X				

## SUB-CONTRACTORS ON SITE:

Layne-Western Drilling Co.

EQUIPMENT ON SITE. CME-75 Drill Rig, Steam Cleaner, Surge block, pH meter, conductivity, temperature, and turbidity meter, water level indicator, centrifugal pump, CFP electric submersible pump

## WORK PERFORMED (INCLUDING SAMPLING):

Development of Well 103-91

Took water level and total depth.

Surge well with 10 ft, 1.5 in-diameter rod hooked to wireline cable on well.

Took sample.

Install electric submersible pump at 31 ft. Pump well at 7-<sup>CFP</sup> 9 gals per min. Took samples <sup>CFP</sup> every 10 min intervals. Measured pH, temp., conductivity, and turbidity and water level.

Pump CFP Turn pump off. Surge w/ surge block for 5 min.

Pump until parameters vary less than 10% for four consecutive readings. No Measured total depth - no fill. Took picture of water sample. Water appearance is clear.

Well considered developed.

Pumped a total of 815 gal of water today.

Bailed 45 gallons or 9<sup>well</sup> volumes by hand to clean out any possible contamination from pump.

SHEET 1 of 2

1 Oct 90

(Continuation Sheet)

PROJECT NL/Taracorp Superfund Site

REPORT NO. \_\_\_\_\_

JOB NO. 89MC114VDATE 12/9/91

## QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

~~Layne Western CFP~~

Conducted Before and After field calibrations during day for pH, conductivity, temperature, and turbidity. See Calibration Field Log Book.

## HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level "D"

Decommed Equipment and Personnel

## PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

~~None~~ CFP After well has been disturbed by ~~sc~~ CFP bailing or removing pump. Well water becomes cloudy. Well developed well for over 8 hours. Contacted USACE geologist, discussed problem. Decided due to the fine silt and clay within the natural formation, the well may be considered developed.

## SPECIAL NOTES.

## TOMORROW'S EXPECTATIONS:

None. Released Rig Crew today.

BY Cynthia Parilla TITLE Assist Proj Engineer

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Bucholtz  
PROJECT NL/Toro Corp  
JOB NO. 89M6114V  
CONTRACT NO. 0021

DATE 12-9-91

DAY 

S	M	T	W	TH	F	S
	X					

WEATHER 

Broke Sun	Clear	Overcast	Rain	Snow
		X		

TEMP 

To 32	32-50	50-70	70-85	85-100
	X			

WIND 

Still	Light	High	Report No.	
	X			

HUMIDITY 

Dry	Moist	Humid	23-7	
	X			

## SUB-CONTRACTORS ON SITE:

Woodward-Chyle Consultants

## EQUIPMENT ON SITE.

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled - McCombbridge Washington - 811  
Washington 1013, Washington 1203, Iowa 1238, Iowa 4408, Grand 1327, Cleveland 1929  
Mercedocia 618, State 814, Grand 1327, Cleveland 1929  
Total - 60

Lead Dups - McCombbridge (3) Washington (3) Iowa 4408 (3)  
Mercedocia 618 (3) Cleveland 1929 (3) - Total - 12

Lead Quality - McCombbridge (3) Washington (3) Washington 1013 (2)  
Wash - 1203 (3) Iowa 1238 (3) Iowa 4408 (3) Mercedocia (3)  
Mercedocia (3), State 814 (3), Grand 1327 (3) Cleveland 1929 (3)  
Total - 30

Lead Matrix Spike - Mercedocia (3), State 814 (3) - Total 6

Lead Matrix Spike Dups - Mercedocia (3), State 814 (3)  
Total - 6

Decommed Equipment & personnel IAW Sop #6.  
Abandoned boring IAW Sop #7.  
Sampled IAW Sop #1.

PROJECT NL / Tarecup

REPORT NO. 22-7

JOB NO. 89MC114V

DATE 12-9-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified level D.  
Decommed equipment & personnel.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Sample - Schaffer Rd & Missouri Ave.

BY Shirley TITLE Staff Scientist

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Bucholtz  
PROJECT NL/Taracorp  
JOB NO. 89M C114V  
CONTRACT NO. 0021

DATE 11-10-91  
DAY 

S	M	T	W	Th	F	S
		X				

WEATHER	Brgt Sun	Clear	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85 to
WIND	Still	Moist	Hgt	Report No.	
HUMIDITY	Dry	Moist	Humid	23-1 -?	

## SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants

## EQUIPMENT ON SITE:

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled Hemate Fill areas - Schaeffer Rd. & Missouri Ave. Collected 3 samples at Schaeffer Rd. & 4 samples at Missouri Ave.

Decanned equipment & personnel FAW Sop #6.  
Abandoned Boring FAW Sop #7.  
Sampled FAW Sop #1.

ER 1110-1-100  
1 Oct 90

(Continuation Sheet)

PROJECT NL / TargCorp

REPORT NO. 23-4

JOB NO. 89MC114V

DATE 12-10-91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified level D.  
Decommed equipment & personnel.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Unload trucks & take computers & other  
equipment back to St. Louis office  
& close-up until February or March.

BY X. W. Allen TITLE Staff Scientist

Figure 2 (Continued)



ER 1110-1-263  
1 Oct 90

DATE

DAY

CFP  
12/13/91

S	M	T	W	TH	<input checked="" type="checkbox"/>	S
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## A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Buchholz  
PROJECT NL/Taracorp Superfund Site  
JOB NO. 89MC114V  
CONTRACT NO. 0021

WEATHER

Bright Sun	<input checked="" type="checkbox"/>	Overcast	Rain	Snow
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TEMP

To 32	<input checked="" type="checkbox"/>	50-70	70-85	85 up
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WIND

St	<input checked="" type="checkbox"/>	Moder	High	Report No.
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HUMIDITY

Dry	<input checked="" type="checkbox"/>	Moder	Humid	
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SUB-CONTRACTORS ON SITE:

L. G. Zambrana Consultants

EQUIPMENT ON SITE:

Hand digging equipment (shovels, post-hole digger, etc.),  
monument rods.

WORK PERFORMED (INCLUDING SAMPLING):

Install 4 permanent horizontal monuments (USACE Type G)  
around industrial site area.

For each monument:

Dig 2 ft deep x 6-8 in wide hole.

Hammer <sup>CFP</sup> 4 ft monument rod into ground and make flush  
with ground.

Fill hole w/ cement grout mixture.

Decor equipment and personnel.

and CFP and decor water  
Soil from borings was placed on Trust 454 pile or Taracorp pile

SHEET \_\_\_\_ OF \_\_\_\_

FIGURE NO 2

EP 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NL/Tamcorp

REPORT NO. \_\_\_\_\_

JOB NO. 89MC114V

DATE 12/13/91

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level "D" for monument installation.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

None

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Begin surveying borings and monitoring wells next week, Dec. 16-20.

BY Cynthia Lovell TITLE Assistant Project Engineer

Figure 2 (Continued)

DATE 3/2/92  
CITY LA

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Bruchelt  
PROJECT NL/Twincoast SPDFI  
JOB NO. 89MC114V Work Order #008.1  
CONTRACT NO. 8021-TP DEAW45-90-D-0008

WEATHER	Brief Sun	Clear	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85 up
WIND	Dir	Mod	Hgt	Report No.	
HUMIDITY	Dir	Mod	Hgt		

## SUB-CONTRACTORS ON SITE:

Woodward - Clyde Consultants HAB Team 1

## EQUIPMENT ON SITE:

HAB KIT

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled 2153 Benton - 6 Samples for total lead  
2164 Benton " "  
1716 OLIVE " "  
1724 OLIVE 3 Samples for total lead  
1725 OLIVE - 6 Samples for total lead  
1729 OLIVE " " " "

Sampled 301 IAW SOP #1  
Decon Equipment IAW SOP #6  
Abandoned bearings IAW SOP #7

ER 1110-1-263  
1 Oct 90

Continuation Sheet

PROJECT NL/Taxcorp

DATE 3/2/92

JOB NO. 89MC114V

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level D  
Personnel and Equipment Decon IAW SOP#6

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

For 1724 Olive, the backyard was not sampled due to gate was  
locked. Will contact resident to open gate and sample at a later time.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

Sample Delmar St 19-1745

BY

Eric D. Page

TITLE

Staff  
Geologist

EP 111-1  
1 Oct 90

DATE 3/3/92

DAY 

S	M	<u>X</u>	W	Th	F	S
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# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT NLTSS PDFI  
JOB NO. Work Order # 0021  
CONTRACT NO. DACW45-90-D-0008

WEATHER 

Buff Sky <u>X</u>	Clear <u>X</u>	Overcast	Rain	Snow
TEMP To 32	32-50	<u>50-70</u>	70-85	85-100
WIND <u>SW</u>	MOOR	HGT	Report No.	
HUMIDITY <u>90</u>	MOOR	HUMID		

## SUB-CONTRACTORS ON SITE:

WICC HARB Crenel

## EQUIPMENT ON SITE:

HARB R-1

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled 1619 Delmar 6 Total Lead  
3 Duplicate  
3 QA

1628 Delmar 6 Total Lead  
3 Duplicate  
3 Quality Assurance

1636 Delmar 6 Total Lead

1638 Delmar 6 Total Lead

1637 Delmar 6 Total Lead

3 Lead Duplicate

3 Quality Assurance

1715 Delmar 6 Total Lead

1725 Delmar 6 Total Lead

3 Quality Assurance

3 Lead Duplicate

1726 Delmar 6 Total Lead

1737 Delmar 6 Total Lead

3 Lead Duplicate

3 Quality Assurance

2137 Delmar 3 Total Lead

Sampling IAW SOP #1, Down Equipment IAW SOP #6  
Abandoned Berings IAW SOP #7

EP 1110-1-700  
1 OCT 90

(Continuation Sheet)

PROJECT NLTSS PDF I

REPORT NO. \_\_\_\_\_

JOB NO. Work Order # 0021

DATE 3/3/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Take Field Duplicates and QA Samples for:

1628 Delmar, Boring I

1637 Delmar, Boring I

1725 Delmar, Boring I

1737 Delmar, Boring I

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level 1

Personnel & Equipment Decon

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

Sample on Adams & Benton Streets

BY

E. J. Boyd

TITLE

Staff Ecologist

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
 PROJECT NLTSS PDFI  
 JOB NO. Work Order # 0021  
 CONTRACT NO. DACW45-90-D-0008

DATE 3/4/92

DAY 

S	M	T	W	TH	F	S
			X			

WEATHER 

Bright Sun	Clear	Overcast	Rain	Snow
		X		

TEMP 

To 32	32-50	50-70	70-85	85-100
		X		

WIND 

Still	Moder	High	Report No.	
X	→			

HUMIDITY 

Dry	Moder	Humid		
X	→			

## SUB-CONTRACTORS ON SITE:

WCC HAB Team 1

## EQUIPMENT ON SITE:

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled	Location	6 Samples	Total Len
2100	Adams		
2128	"		
2140	"		
2148	"		
1916	Benton		
1922	"		
1926	"		
1940	"		
1941	"		
2020	"		
2030	"		
2034	"		
2140	"		

Soil Sampling done 1Aw SOP 1  
 Decon done 1Aw SOP 6  
 Being Abandonment 1Aw SOP 7

PROJECT NLTSS PDF I

REPORT NO. \_\_\_\_\_

JOB NO. Work Order # 0021

DATE 3/4/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level 1  
Personnel & Equipment decon

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

Sample Maple & Benton Streets

BY E. A. Ray TITLE Staff Geologist



# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
 PROJECT NLTSS PDFI  
 JOB NO. Work Order # 0021  
 CONTRACT NO. DACW45-90-D-0008

DATE 3/5/92

DAY 

S	M	T	W	Th	F	S
			7	8		

WEATHER	Brief Sun	Cloudy	Overcast	Rain	Snow
		X	X		
TEMP	To 32	32-50	50-70	70-85	85 to
			X		
WIND	Stl	Mod	Hgh	Report No.	
	X				
HUMIDITY	Dry	Mod	Humid		
		X			

## SUB-CONTRACTORS ON SITE:

WCC HAB CORN

## EQUIPMENT ON SITE:

WCC HAB KIT

## WORK PERFORMED (INCLUDING SAMPLING):

SAMPLE	BENTON	2244	6 Samples	Total Lead
		2246		
		2256		
	MAPLE	1642		
		1641		
		1635		
		1633		
		1619		
		1617		
		1618		
		1603		
		1632		

+3 Duplicates

Soil sampling IAW SOP #1  
 Decon Equip + Personnel IAW SOP #6  
 Abandon Boring IAW SOP #7

PROJECT NLTSS PDF I  
JOB NO. Work Order # 0021

REPORT NO. \_\_\_\_\_  
DATE 3/5/92

## QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

QA Samples for boring 1 depths A, B, C  
at 2256 BENTON, 1641 MAPLE, 1619 MAPLE, 1618 MAPLE

2256 Benton for boring 1 depths ABC took duplicates.

## HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level 12  
Personnel & Equipment Decon

## PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Hostile residents at 1633 Maple; Shamed them  
Signed access agreement

## SPECIAL NOTES.

## TOMORROW'S EXPECTATIONS

Sample Cleveland 1400 → 2000

BY

E. S. Pyle

TITLE

Staff  
Geologist

DATE 3/6/92

DAY 

S	M	T	W	Th	<u>K</u>	S
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# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT NLTSS PDFI  
JOB NO. Work Order # 0021  
CONTRACT NO. DACW45-90-D-0008

WEATHER	Bright Sun	Clear	Overcast <u>K</u>	Rain	Snow
TEMP	To 32	32-50	50-70 <u>K</u>	70-85	85 up
WIND	Stl	<u>K</u>	Hgt	Report No.	
HUMIDITY	Dry	<u>K</u>	Humid		

## SUB-CONTRACTORS ON SITE:

WCC HAB Crew 1

## EQUIPMENT ON SITE:

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled 1624 Cleveland 6 total lead  
1628  
1726  
2008  
2026  
2030  
2057  
2114  
2121  
2127  
2128  
2131  
2126

Soil Sampling IAW SOP#1, Decon. Equip. & Personnel IAW SOP#6  
Abandon Borehole IAW SOP#7

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NLTSS PDFI

REPORT NO. \_\_\_\_\_

JOB NO. Work Order # 0021

DATE 3/6/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level D  
Personnel & Equipment Decon

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Sample Grand and Cleveland Street

BY E. A. Pugh TITLE Geologist

DATE 3/9/92

DAY 

S	<input checked="" type="checkbox"/>	T	W	Th	F	S
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# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT NLTSS PDFI  
JOB NO. Work Order # 0021  
CONTRACT NO. DACW45-90-D-0008

WEATHER	Brgt Sun	Clear	Overcast	Rain	Snow
TEMP	To 32	32-50	50-80	70-85	85-100
WIND	Still	Light	Mod	Report No.	
HUMIDITY	Dry	Mod	Humid		

## SUB-CONTRACTORS ON SITE:

WCC HAB Crew #1

## EQUIPMENT ON SITE:

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled	Location	Notes
2145	Cleveland	→ 6 Samples Total Lead
2149	"	
2153	"	
2156	"	
2160	"	
2161	"	
2164	"	
2012	Grand	
2016	"	
1719	"	
1929	"	3 samples
1937	"	6 samples

only total lead CFP  
total lead

Soil Sampling IAW SOP #1  
Decom Equipment & Personnel IAW SOP #6  
Abandon Borehole IAW SOP #7

PROJECT NLTSS PDFI

REPORT NO. \_\_\_\_\_

OSNO Work Order # 0021

DATE 3/9/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level D PPE  
Decon (Sampling)

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

for the  
1929 Grand Ave. - Samples were not taken due to backyard area  
because gravel was fully covered it.

Unable to Sample 2014 Grand. Front yard is  
a garden of flowers, backyard is full and can  
only be accessed through house and no one was  
home.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS.

Sample 2200 Cleveland Block

BY

E. D. Pugh

TITLE

Ecologist

LN 111-11-001  
1 Oct 90

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT INLTSS PDFI  
JOB NO. Work Order # 0021  
CONTRACT NO. DACW45-90-D-0008

DATE 3/10/92  
DAY 

S	M	<input checked="" type="checkbox"/>	W	TH	F	S
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WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
TEMP	14-32	32-50	50-70	70-85	85-100
WIND	SE	MOOR	High	Report No.	
HUMIDITY	Dry	MOOR	Humid		

SUB-CONTRACTORS ON SITE:

WCC HAT corp.

EQUIPMENT ON SITE:

WORK PERFORMED (INCLUDING SAMPLING):

No sampling conducted due to cold and windy weather.  
Verified Street Addresses and identified properties w/ duplexes.  
Verified Address by driving up and down streets w/ master list.  
Corrected master list w/ street & number given on house.

ER 1110-1-100  
1 OCT 90

(Continuation Sheet)

PROJECT NLTSS PDFI

REPORT NO. \_\_\_\_\_

JOB NO. Work Order # 0021

DATE 3/10/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

*None required*

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

*None*

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

*If it warms up, sample 2200 Block of Cleveland.*

BY C. Pavlha

TITLE Assistant Proj. Eng.



1 Oct 90

A-E DAILY QUALITY  
CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
 PROJECT NLTSS PDFI  
 JOB NO. Work Order # 0021  
 CONTRACT NO. DACW45-90-D-0008

DATE 3/11/92DAY 

S	M	T	W	TH	F	S
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WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
TEMP	<del>42-50</del>	<del>42-50</del>	50-70	70-85	85-100
WIND	<del>SW</del>	MOOR	HGT	Report No.	
HUMIDITY	Dry	<del>MOOR</del>	HUMID		

## SUB-CONTRACTORS ON SITE:

WCC HAB Team 1

## EQUIPMENT ON SITE:

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

<u>Sampled</u>	<u>Cleveland</u>	<u>2208</u>	<u>6 Samples total lead + 3 duplicates</u>
		<u>2217</u>	<u>6 Samples total lead</u>
		<u>2221</u>	
		<u>2222</u>	
		<u>2229</u>	
		<u>2242</u>	<u>+ 3 duplicates</u>
		<u>2243</u>	
		<u>2246</u>	
		<u>2254</u>	<u>3 Samples total lead + 3</u>
		<u>2264</u>	<u>6 Samples total lead</u>

<u>Sampling performed</u>	<u>IAW</u>	<u>SOP</u>	<u>1</u>
<u>Decon performed</u>	<u>IAW</u>	<u>SOP</u>	<u>6</u>
<u>Documentation</u>	<u>IAW</u>	<u>SOP</u>	<u>3</u>
<u>Boring Abandonment</u>	<u>IAW</u>	<u>SOP</u>	<u>7</u>

PROJECT NLTSS PDFI  
JOB NO. Work Order # 0021

REPORT NO. \_\_\_\_\_  
DATE 3/11/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

3 quality Assurance Samples at Cleveland 2208  
2221  
2242  
2254

HEALTH AND SAFETY LEVELS AND ACTIVITIES

Modified level D PPE  
Hand auger sampling & decon

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

No backyard samples at 2254 Cleveland due to  
a pool & patio

SPECIAL NOTES

TOMORROW'S EXPECTATIONS:

Sample 2200 Grand

BY E. Pyle Geologist  
TIME 3/11/92

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT NLTSS PDFI  
JOB NO. Work Order # 0021  
CONTRACT NO. DACW45-90-D-0008

DATE 3/12/92

DAY 

S	M	T	W	Th	F	S
				X		

WEATHER 

Brgt Sun	Clear	Overcast	Rain	Snow
		X		

  
TEMP 

10-22	22-50	50-70	70-85	85-100
X				

  
WIND 

Still	Modest	High	Report No.	
X				

  
HUMIDITY 

Dry	Modest	Humid		
X				

## SUB-CONTRACTORS ON SITE:

WCC HAB Crew #1

## EQUIPMENT ON SITE:

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled	2209	Grand	6 samples total / eurl + 3 dup.
	<del>2209</del>	<del>Grand</del>	<del>3 samples CAP</del>
	2228	"	6 samples total / eurl
	2213	"	"
	2221	"	"
	2217	"	"
	2233	"	" + 3 duplicates
	2263	"	"
	2254	"	"
	2248	"	"

Soil Sampling IAW SOP #1  
Documentation IAW SOP #5  
Decon Equip & PPE IAW SOP #6  
Abiotic Bioassay IAW SOP #7

1 DEC 90

(Continuation Sheet)

PROJECT NLTSS PDF I  
JOB NO. Work Order # 0021 -

REPORT NO. \_\_\_\_\_  
DATE 3/12/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Quality Control Samples Taken for	Boring 1,	2209 Grand
"	"	2221 Grand
"	"	2233 Grand
"	"	2254 Grand

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level "D" PPE  
Hand auger sampling & decon

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

~~None~~ None

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

Sample 2200 Delmar

BY C. L. L. L. TITLE Assistant Survey Eng.

DATE March 13, 1992

DAY 

S	M	T	W	TH	F	S
					X	

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT MLTSS PDFI  
JOB NO. Work Order # 0021  
CONTRACT NO. DACW45-90-D-0008

WEATHER	Brght Sun	Clear X	Overcast	Rain	Snow
TEMP	To 32 AM	32-30 PM	55-70	70-85	45-60
WIND	SE	MOOR	HIGH	Report No.	
HUMIDITY	Dry X	MOOR	HUMID		

SUB-CONTRACTORS ON SITE: NONE ; WCC personnel Only

EQUIPMENT ON SITE.

HAB Sampling Equipment

WORK PERFORMED (INCLUDING SAMPLING):

Sampled The following : 2205 Delmar  
2206 Delmar  
2218 Delmar  
2227 Delmar  
2233 Delmar  
2234 Delmar

Disposed of ± 80 gallons of Decon water at  
Tara corp Pile @ 1:00 PM

Soil Sampling IAW SOP #1  
DECON EQUIPMENT + PERSONNEL IAW SOP #6  
ABANDON BOREHOLE IAW SOP #7

PROJECT NLTSS PDF 1

REPORT NO. \_\_\_\_\_

JOB NO Work Order # 0021

DATE 3-13-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level "D" PPE  
Decon + Sampling

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

Finish Delmar on Monday

*[Signature]*

*Geologist*

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT NLTSS PDFI  
JOB NO. Work Order # 0021  
CONTRACT NO. DACW45-90-D-0008

DATE 3/16/92

DAY 

S	M	T	W	TH	F	S
	X					

WEATHER 

Bright Sun	Clear	Overcast	Rain	Snow
	X	X		

TEMP 

To 32	32-50	50-70	70-85	85 to
	X			

WIND 

Still	Moder	High	Report No.	
X				

HUMIDITY 

Dry	Moder	Humid		
	X			

## SUB-CONTRACTORS ON SITE:

WCC HAB Sampling Team

## EQUIPMENT ON SITE:

HAB kit & PPE

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled	Grand	6 Samples Total Lead
- 1410	"	"
- 1412	"	"
- 1414	"	"
- 1422	"	"
1423	"	"
- 1424	"	"
- 1425	"	"
- 1437	"	"
1440	"	3 Samples Total Lead
- 1442	"	6 Samples Total Lead
- 1443	"	3 Samples Total Lead

Soil Sampling Done IAW SOP #1  
Decon & PPE IAW SOP #6  
Documentation IAW SOP #5  
Abandon Boring IAW SOP #7

PROJECT NLTSS PDF I

REPORT NO. \_\_\_\_\_

JOB NO. Work Order # 0021

DATE 3/16/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

PPE: Modified Level "D"

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

1440 Grand - Boring 2 Not Taken because of backyard  
1443 Grand     " " " " " " "

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS.

2200 Block of Delmar  
2100 Block of Grand.

BY C. Paulsen

TITLE Assistant Project Engineer



DATE 3/17/92 St. Pats

DAY 

S	M	<input checked="" type="checkbox"/>	W	Th	F	S
---	---	-------------------------------------	---	----	---	---

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT NLTSS PDFI  
JOB NO. Work Order # 0021  
CONTRACT NO. DACW45-90-D-0008

WEATHER	Bright Sun	Clear	<input checked="" type="checkbox"/> Overcast	Rain	Snow
TEMP	To 32	32-50	<input checked="" type="checkbox"/> 50-70	70-85	85-100
WIND	<input checked="" type="checkbox"/> S	Mod	Hgt	Report No.	
HUMIDITY	Dry	Mod	<input checked="" type="checkbox"/> High		

## SUB-CONTRACTORS ON SITE:

WCC HAB Team #1

## EQUIPMENT ON SITE.

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

<u>Sampled</u>	<u>1714</u>	<u>Gravel</u>	<u>3 total lead</u>
	<u>2127</u>	<u>Gravel</u>	<u>6 total lead</u>
	<u>2139</u>	<u>Gravel</u>	<u>3 total lead</u>
	<u>2245</u>	<u>DELMAR</u>	<u>6 total lead</u>
	<u>2247</u>		
	<u>2253</u>		
	<u>2256</u>		
	<u>2260</u>		
	<u>2262</u>		
	<u>2147</u>		<u>+ 3 lead dup</u>
	<u>2153</u>		<u>+ 3 lead dup</u>
	<u>2157</u>	<u>✓</u>	<u>✓ + 3 lead dup</u>

Soil Sampling IAW SOP #1  
Drawn & PPE IAW SOP #6  
Documentation IAW SOP #5  
Abundant Borehole IAW SOP #7

BR 1110-1-2e3  
1 Oct 90

(Continuation Sheet)

PROJECT NLTSS PDFI

REPORT NO. \_\_\_\_\_

JOB NO. Work Order # 0021

DATE 3/17/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Took 3 QA Samples at 2147 Delmar  
3 Duplicate 2153 Delmar  
2157 Delmar

HEALTH AND SAFETY LEVELS AND ACTIVITIES

Modified Level D PPE

Decon & Sampling performed

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

1714 Grand - Backyard Not Sampled - Gate Locked.  
Will call resident at later time to open gate.

2139 Grand - Backyard Not Sampled - Gate Locked.  
Will call resident at later time to open gate.

SPECIAL NOTES

TOMORROW'S EXPECTATIONS

Sample Edison St

BY E. A. Pugh TITLE Geologist

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
 PROJECT NLTS PDE  
 JOE NO. WORK ORDER # 0021  
 CONTRACT NO. D-42W45-90-D-0008

3/18/92

DAY S M T X W T F S

WEATHER	Bright Sun	Clear	Overcast	Rain <u>X</u>	Snow
TEMP	To 32	32-50 <u>X</u>	50-70	70-85	85-100
WIND	Still	Light <u>X</u>	High	Report No.	
HUMIDITY	Dry	Moist	Humid <u>X</u>		

SUB-CONTRACTORS ON SITE:

WCC HAB #1

EQUIPMENT ON SITE:

WORK PERFORMED (INCLUDING SAMPLING):

No soil sampling conducted due to  
continuous rain during the day.

PROJECT NLTSS PUF 1

JOB NO Work Order # 0021

DATE 3/18/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN

SPECIAL NOTES

TOMORROW'S EXPECTATIONS

*Cynthia Pavelka*      *As. Proj. Eng.*

DATE 3-19-92

DAY 

S	M	T	W	Th	F	S
				✓		

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT NLTSS PDFI  
JOB NO. Work Order # 0021  
CONTRACT NO. DACW45-90-D-0008

WEATHER	Brief Sun	Clear ✓	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85 up
WIND	Sil	Moder ✓	Hgn	Report No.	
HUMIDITY	Dry	Moder ✓	Humid		

## SUB-CONTRACTORS ON SITE:

WCC HAB Team #1

## EQUIPMENT ON SITE:

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled:

<u>1642</u>	<u>- Edison</u>	<u>6</u>	<u>total lead</u>
<u>1700</u>			
<u>1701</u>			
<u>1708</u>			
<u>1720</u>			
<u>1723</u>		<u>3</u>	<u>total lead</u>
<u>1734</u>		<u>6</u>	<u>total lead</u>

Soil sampling IAW Ssp #1

Decon: PPE IAW Ssp #6

Documentation IAW Ssp #5

Abandon Borehole IAW Ssp #7

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NLTSS PDFI

REPORT NO. \_\_\_\_\_

JOB NO. Work Order # 0021

DATE 3-19-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified level D PPE

Decon & sampling performed

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

1723 Edison - could not sample back yard,  
resident couldn't chain dog up.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Sample - Edison 2137, 2144, 2153, 2165,  
Washington 2020, 2021, 2024, 2026,  
2031, 2034, 2043.

BY Kim Hader TITLE Staff Scientist

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT NLTSS PDFI  
JOB NO. Work Order # 0021  
CONTRACT NO. DACW45-90-0-0008

DATE 3-Dec-90  
DAY 

S	M	T	W	Th	F	S
						✓

WEATHER	Brgt Sun	Clear	Overcast	Rain	Snow
			✓		
TEMP	To 32	32-50	50-70	70-85	85-100
		✓			
WIND	Still	Modest	High	Report No.	
		✓			
HUMIDITY	Dry	Modest	Humid		
		✓			

## SUB-CONTRACTORS ON SITE:

WCC HAB Sampling Team

## EQUIPMENT ON SITE:

HAB Kit & PPE

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled - 2137 Edison 6 Samples Total Lead

2144 " " " "

2153 " " " "

2020 Washington " "

2034 Washington " "

2046 Washington 9 samples Total Lead

2024 Washington " "

1631 Olive " "

1650 Olive " "

1633 Olive " "

- 1635 Olive 12 samples Total Lead

Soil Sampling Done IAW Sept #1.

Downed IAW Sept #2.

Downed IAW Sept #3.

Aberdeen Bearing IAW Sept #7.

PROJECT NLTSS PDFI

REPORT NO. \_\_\_\_\_

JOB NO. Work Order # 0021

DATE 3-22-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

PPE - Modified Level "D"

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

2165 Edison - Unable to sample paved lot.  
2020 Washington - Unable to sample backyard, gate locked.  
2021 Washington - Unable to sample fill & gravel area.  
2031 Washington - Unable to sample gravel lot.  
2043 Washington - Unable to sample paved lot.  
1631 Olive - Unable to sample front, fill & gravel.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Sample Lee & State St.

BY Tom Jackson TIME 5:14 PM



# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT INLTSS PDFI  
JOB NO. Work Order # 0021  
CONTRACT NO. DACW45-90-D-0008

DATE 3-23-92  
DAY 

S	M	T	W	Th	F	S
	✓					

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85 up
WIND	Still	Moder	Hgh	Report No.	
HUMIDITY	Dry	Moder	Humid		

## SUB-CONTRACTORS ON SITE:

WCC HAB Sampling Team

## EQUIPMENT ON SITE:

HAB Kit & PPE

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled - 2027 Lee St. 6 samples Total Lead  
2123 " " " " "  
2127 " " " " "  
2145 " " " " "  
2149 " " " " "  
2147 " " " " "  
2158 State St. " " "  
2132 " " " " "  
2135 " " " " "  
2148 " " 3 samples Total Lead  
2101 " " 6 samples Total Lead  
2118 " " " " "  
2119 " " " " "

Soil Sampling Done IAW Sop #1.  
Decom & PPE IAW Sop #6.  
Documentation IAW Sop #5.  
Airborne Boring IAW Sop #7.

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NLTSS PDFI

REPORT NO. \_\_\_\_\_

JOB NO. Work Order # 0021

DATE 3-23-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

PPE: Mod: Food Level "D"

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

2148 State St - Boring 2 unable to sample -  
gate blocked, resident not here

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Walnut, Chestnut & Iowa.

BY S. Haden TITLE Staff Scientist

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT NLTSS PDFI  
JOB NO. Work Order # 0021  
CONTRACT NO. DACW45-90-D-0008

DATE 3-24-92

DAY 

S	M	T	W	Th	F	S
		X				

WEATHER	Brief Sun	Clear	Overcast	Rain	Snow
		X			
TEMP	To 32	32-50	50-70	70-85	85-100
		X			
WIND	Stl	Mod	Hgt	Record No.	
HUMIDITY	Dry	Mod	Humid		
		X			

## SUB-CONTRACTORS ON SITE:

WCC HAB Sampling Team

## EQUIPMENT ON SITE:

HAB kit & PPE

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled:	931	Niedringhaus	3 Samples Total Lead
	929	" "	6 Samples Total Lead
	1751	Walnut	" " "
	1745	" "	9 Samples Total Lead
	910	Niedringhaus	6 samples Total Lead
	1713	Walnut	" " "
	1711	" "	" " "
	1724	Olive	3 samples Total Lead
	1753	Chestnut	6 samples Total Lead
	1754	" "	" " "
	1751	" "	" " "
	1716	" "	" " "
	1712	" "	9 samples Total Lead

Soil Sampling Done IAW Sep #1.  
Dress & PPE IAW Sep #6  
Documentation IAW Sep #5.  
Abandon Boring IAW Sep #7.

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NLTSS PDFI

REPORT NO. \_\_\_\_\_

JOB NO. Work Order # 0021

DATE 3-24-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Quality Assurance Samples and Duplicates taken for Boring 1, 929 Niedringhaus  
" " " " " " " " 1745 Walnut - 3 sample  
" " " " " " " " 1712 Chestnut - 2 sample

D.C.P. Quality Assurance Samples taken for Boring 1, 929 Niedringhaus

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

RPE - Modified Level "D"

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Niedringhaus 931 - Unable to take B2, all  
gap pavement & gravel.

Niedringhaus 929 - Unable to take B2, no front  
yard.

Walnut 1745 - Unable to take B2 no front or  
side yard.

Chestnut 1712 - Unable to take B2, all gravel in back yard

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Olive, Maple, Spruce & Niedringhaus

BY Shirley Hleda TITLE Staff Scientist

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT NLTSS PDFI  
JOB NO. Work Order # 0021  
CONTRACT NO. DACW45-90-D-0008

DATE 3-25-92

DAY 

S	M	T	W	TH	F	S
			X			

WEATHER 

Brief Sun	Clear	Overcast	Rain	Snow
			X	

TEMP 

To 32	32-50	50-70	70-85	85 up
	X			

WIND 

Still	Modest	High	Report No.	
	X			

HUMIDITY 

Dry	Modest	Humid		
	X			

## SUB-CONTRACTORS ON SITE:

WCC HAB Sampling Team.

## EQUIPMENT ON SITE:

HAB kit & PPE.

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled - 822 Niedringhaus - 6 Samples Total Lead  
828 " " " " " "  
1709 Maple - 3 Samples Total Lead  
1722 " " - 6 Samples Total Lead  
1731 " " - " " "  
1739 Olive - " " "  
1735 " " - " " "  
1732 " " - " " "  
1618 Spruce - " " "  
1642 " " - " " "  
1734 " " - " " "  
1750 " " - " " "

Soil Sampling Done IAW Sop #1.  
Decon of PPE IAW Sop #6.  
Documentation IAW Sop #5.  
Abandoned Boring IAW Sop #7.

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NLTSS PDFI

REPORT NO. \_\_\_\_\_

JOB NO. Work Order # 0021

DATE 3-25-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

PPE: Modified Level "D"

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

1709 Maple - Unable to take B<sub>2</sub> on side or  
front yard, neighbors yard  
next door was new fill.

1750 Spruce - B<sub>1</sub> taken by tree.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Elizabeth, Grand & Madison.

BY Kim Hester TITLE Staff Scientist

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT NLTSS PDFI  
JOB NO. Work Order # 0021  
CONTRACT NO. DACW45-90-D-0008

DATE 3-26-92

DAY	S	M	T	W	Th	F	S
					X		

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
		X			
TEMP	To 32	32-50	50-70	70-85	85 up
WIND	Still	Light	High	Report No.	
		X			
HUMIDITY	Dry	Moist	Humid		
		X			

## SUB-CONTRACTORS ON SITE:

WCC HAB Sampling Team

## EQUIPMENT ON SITE:

HAB kit & PPE

## WORK PERFORMED (INCLUDING SAMPLING):

Sample ID	Location	Number of Samples	Total Lead
Sampled - 1214	Gravel	6	Samples Total Lead
1225	" "	1	" "
1201-15	" "	1	" "
1242	" "	1	" "
1125	" "	1	" "
1229	" "	9	Samples Total Lead
1231	" "	6	Samples Total Lead
1238	" "	3	Samples Total Lead
906	" "	9	Samples Total Lead
901	" "	6	Samples Total Lead
900	" "	12	Samples Total Lead
919	" "	6	Samples Total Lead

Soil Sampled IAW Sop #1.  
Decor & PPE IAW Sop #6  
Documentation IAW Sop #5.  
Abandoned Boring IAW Sop #7.

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NLTSS PDFI

REPORT NO. \_\_\_\_\_

DATE 3-26-92

JOB NO. Work Order # 0021

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

3 Quality Assurance and 3 Duplicate Samples Taken for <sup>off</sup> 900 Grand, Boring  
3 Quality Assurance Samples Taken for Boring 1, 906 Grand  
" " " " " Boring 1, 1229 Grand

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

PPE : Modified Level "D"

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Grand 1238 - Unable to take B2, gate locked.  
Grand 925 - Unable to sample all gravel & pavement.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Iowa & Grand.

BY Ken Black

TITLE Staff Scientist



# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT MLTSS PDFI  
JOB NO. Work Order # 0021  
CONTRACT NO. DACW45-90-D-0008

DATE 3-27-92

DAY 

S	M	T	W	TH	F	S
					X	

WEATHER 

Brgt Sun	Clear	Overcast	Rain	Snow
	X			

  
TEMP 

To 32	32-50	50-70	70-85	85-100
		X		

  
WIND 

Still	Light	High	Report No.	
	X			

  
HUMIDITY 

Dry	Moist	Humid		
	X			

## SUB-CONTRACTORS ON SITE:

LCC HAB Sampling Team

## EQUIPMENT ON SITE:

HAB Kit & PPE

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled:	1308	Good	9 Samples Total Lead
	1310	" "	6 Samples Total Lead
	1101	" "	6 samples Total Lead
	801	" "	" " "
	805	" "	" " "
	825	" "	" " "
	833	Iowa	3 Samples Total Lead
	817	" "	6 Samples Total Lead
	810	" "	" " "
	803	" "	3 samples Total Lead
	805	" "	" " "
	804	" "	6 samples Total Lead

Soil Sampling IAW Sop #1.

Decon & PPE IAW Sop #6.

Documentation IAW Sop #5.

Absorbent Boiling IAW Sop #7.

PROJECT NLTSS PDF1 REPORT NO. \_\_\_\_\_  
JOB NO. Work Order # 0021 DATE 3-27-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

PPE - Modified Level "D"

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Iowa 823 - Unable to sample B2, gate locked  
resident not home.  
Iowa 803 - Unable to take B2, no front  
yard, all gravel.  
Iowa 805 - Unable to take B2 all  
plants in front yard.

SPECIAL NOTES

TOMORROW'S EXPECTATIONS

2100 Block of 2100 Edison & State

BY S. Shoda TITLE Staff Scientist

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
 PROJECT MLTSS PPE  
 JOB NO. Work Order # 0031  
 CONTRACT NO. DACW45-90-D-0008

DATE 3-30-70

DAY 

S	M	T	W	Th	F	S
	X					

WEATHER 

Breezy Sun	Clear	Overcast	Rain	Snow
		X		

TEMP 

To 32	32-50	50-70	70-85	85-100
	X			

WIND 

Still	Light	High	Report No.	
	X			

HUMIDITY 

Dry	Moist	Humid	Report No.
	X		

## SUB-CONTRACTORS ON SITE:

WCC HAB Sampling Team

## EQUIPMENT ON SITE:

HAB kits, PPE

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled: 2121 Edison 6 Samples Total Lead

2122 " " 3 Samples Total Lead

2123 " " 6 Samples Total Lead

2125 1/2 " " " " "

2128 " " " " "

2141 " " " " "

2149 " " " " "

2162 State " " "

2150 " " " " "

2159 " " " " "

2139 Grand 3 Samples Total Lead

2148 State " " "

2147 " " 6 Samples Total Lead

Soil Sampled IAW Sop #1

Decon & PPE IAW Sop #6

Documentation IAW Sop #5

Abandoned Backlog IAW Sop #7

PROJECT NLTS PLF 1 REPORT # \_\_\_\_\_  
 JOB NO. Work Order # 0021 DATE 3-22-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

PPE: Modified Level "D"

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN

Edison 2122 - Unable to sample B2 front yard all gravel & shrubs.

Grand 2139 - Only had to sample backyard, front previously done.

State 2148 - " " "

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

Greenwood & McCambridge.

K. Iliada Staff Scientist

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
 PROJECT NLTSS PDFI  
 JOB NO. Work Order # 0021  
 CONTRACT NO. DACW43-90-D-0008

DATE 3-31-92

DAY 

S	M	<input checked="" type="checkbox"/>	W	TH	F	S
---	---	-------------------------------------	---	----	---	---

WEATHER	Brief Sun	Clear	Overcast	Rain	Snow
		<input checked="" type="checkbox"/>			
TEMP	To 32	32-50	50-70	70-85	85-100
		<input checked="" type="checkbox"/>			
WIND	Still	Light	High	Report No.	
HUMIDITY	Dry	Moist	Humid		
		<input checked="" type="checkbox"/>			

## SUB-CONTRACTORS ON SITE:

WCC HAB Sampling Team

## EQUIPMENT ON SITE:

HAB Kit & PPE

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled - 1115 McCarbridge 6 Samples Total Lead

1111 " " " " " "

1105 Hawthorn " " " " "

1103 " " " " "

911a Greenwood " " " "

1028 " " " " "

1012 " " " " "

1015 " " " " "

1030 " " " " "

40 1034 " " 3 Samples Total Lead

1026 " " 6 Samples Total Lead

823 Iowa 3 Samples Total Lead

Soil Sampling Done IAW Sep #1

Decon & PPE IAW Sep #6

Documentation IAW Sep #5

Abandon Boring IAW Sep #7

PROJECT NLTSS PDFI

REPORT NO. \_\_\_\_\_

JOB NO. Work Order # 0021

DATE 3-31-72

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

PPE: Modified Level "D."

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Greenwood 1234 - Unable to take B2  
backyard inaccessible.  
Iowa 825 - Front yard - B' already done.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

2200 Edison.

BY X. Decker Staff Scientist

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
 PROJECT NLTSS PDEI  
 JOB NO. Work Order # 0021  
 CONTRACT NO. DACW45-90-D-0008

DATE 4-1-72

S	M	T	W	TH	F	S
			X			

WEATHER

Brie Sun	Clear	Overcast	Rain	Snow
		X		

TEMP

To 32	32-50	50-70	70-85	85 up
	X			

WIND

Still	Light	High	Record No.	
	X			

HUMIDITY

Dry	Moist	Humid
	X	

SUB-CONTRACTORS ON SITE:

WCC HAB Sampling Team

EQUIPMENT ON SITE:

HAB Kit & PPE

WORK PERFORMED (INCLUDING SAMPLING):

Sampled - 2223 Edison (6 Samples Total) Lead

2207	" "	" "	" "
2212	" "	" "	" "
2218	" "	" "	" "
2219	" "	" "	" "
2211	" "	" "	" "
2215	" "	" "	" "
2225	" "	" "	" "
2222	" "	" "	" "
2230	" "	" "	" "
2235	" "	" "	" "
2232	" "	" "	" "
2237	" "	" "	" "
2245	" "	" "	" "

Soil Sampling IAW Sp #1.  
Decon & PPE IAW Sp #6.  
Documentation IAW Sp #5.  
Abandon Poring IAW Sp #7.

PROJECT NLTSS PDF 1 REPORT NO. \_\_\_\_\_  
JOB NO. Work Order # 0021 DATE 4-1-90

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

2223 Edison - 3 QA samples  
~~50-2212~~ " " 3 Dup. samples  
2212 Edison - 3 QA samples  
" " 3 Dup. samples  
2218 Edison - 3 QA samples  
2230 " " - 3 QA samples  
2237 " " - 3 QA samples  
" " 3 Dup. samples

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified level "D" - PPE

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

State St.

BY K. Ileda TITLE Staff Scientist



DATE 4/2/92

DAY 

S	M	T	W	TH	F	S
				X		

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
 PROJECT NLTSS PDFI  
 JOB NO. Work Order # 0021  
 CONTRACT NO. DACW45-90-D-0008

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
		X			
TEMP	To 32	32-50	50-70	70-85	85-100
		X	X		
WIND	Still	Light	Mod	Record No.	
		X			
HUMIDITY	Dry	Mod	Humid		
		X			

SUB-CONTRACTORS ON SITE:				
<u>WCC HAB # 2</u>				
EQUIPMENT ON SITE:				
<u>HAB Equipment List</u>				
WORK PERFORMED (INCLUDING SAMPLING):				
<u>Sampled Residents</u>	<u>2210 State</u>	<u>6 Samples</u>	<u>Total</u>	<u>Lead</u>
	<u>2212 State</u>	<u>"</u>	<u>"</u>	<u>"</u>
	<u>2214 State</u>	<u>"</u>	<u>"</u>	<u>"</u>
	<u>2222 State</u>	<u>"</u>	<u>"</u>	<u>1</u>
	<u>2223 State</u>	<u>"</u>	<u>"</u>	<u>"</u>
	<u>2226 State</u>	<u>"</u>	<u>"</u>	<u>"</u>
	<u>2235 State</u>	<u>"</u>	<u>"</u>	<u>"</u>
	<u>2244 State</u>	<u>"</u>	<u>"</u>	<u>"</u>
	<u>2248 State</u>	<u>"</u>	<u>"</u>	<u>"</u>
	<u>2250 State</u>	<u>"</u>	<u>"</u>	<u>"</u>
<u>Sampled Soil IAW SOP #1</u>				
<u>Documentation IAW SOP #5</u>				
<u>Demon Equip. &amp; PPE IAW SOP #6</u>				
<u>Abandon Boreholes IAW SOP #7</u>				

PROJECT NLTSS PDF I

REPORT NO. \_\_\_\_\_

JOB NO. Work Order # 0021DATE 4/2/92

## QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Took 3 Quality Assurance + 3 Duplicate Samples Boring 1 2214 State  
 " " " " " " " " Boring 1 2250 State  
 Took 3 Quality Assurance Samples Boring 1 2210 State  
 " " " " " " Boring 1 2235 State

## HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level D-PPE

Decon &amp; Sampling Performed

## PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

None

## SPECIAL NOTES.

## TOMORROW'S EXPECTATIONS

Sample 2200 State, 2200 Edison &amp; 1700 Edison

BY C. PavellaTITLE Assistant Proj. Eng.

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
 PROJECT NLTSS PDE  
 JOB NO. Work Order # 0031  
 CONTRACT NO. DACW45-90-D-0008

DATE 4-3-92

DAY 

S	M	T	W	TH	F	S
						✓

WEATHER 

Bryz Sun	Clear	Overcast	Fog	Snow
		✓		

TEMP 

To 12	12-50	50-70	70-85	85-100
		✓		

WIND 

Still	Moody	High	Report No.	
	✓			

HUMIDITY 

Dry	Moody	Humid		
	✓			

SUB-CONTRACTORS ON SITE:

WCC HAB Sampling Team

EQUIPMENT ON SITE:

HAB Kit.

WORK PERFORMED (INCLUDING SAMPLING):

Sampled - 1725 State (6 Samples Total Lead)  
1710 " " " " " "  
2256 " " 3 Samples Total Lead  
2254 " " (6 Samples Total Lead)  
2251 " " " " " "  
2246 Edison " " " " " "  
2254 " " " " " "  
2255 " " " " " "  
2241 " " " " " "  
2262 " " " " " "  
1939 Cleveland " " " "

Sampled IAW Sop # 1.  
Decon & PPE IAW Sop # 6.  
Documentation IAW Sop # 5.  
Absorbency IAW Sop # 7.

DATE 4-3-92

PROJECT NLTSS PDF 1 REPORT NO. \_\_\_\_\_

JOB NO. Work Order # 0021 DATE 4-3-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Sampled: 1725 State 3 QA samples  
1710 " " " "  
" " " 3 Dup.  
2251 " " 3 QA samples  
2255 Edison 3 QA samples +  
3 Dup.  
2262 " " 3 QA samples  
1931 Cleveland 3 QA samples

HEALTH AND SAFETY LEVELS AND ACTIVITIES

Modified Level - "D"  
Decon & Sampling performed

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN

State 2256 - Unable to sample  
backyard, gate locked.  
Edison 2244 - Unable to sample  
directly in backyard - forced  
in, sampled on side yard.

SPECIAL NOTES

TOMORROW'S EXPECTATIONS

Iowa (100)

4/3/92 Staff Scientist

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHALZ  
PROJECT NLTSS PDFI  
JOB NO. Work Order # 0021  
CONTRACT NO. DACW45-90-D-0008

6 APRIL 1992

DAY S M T W T F S

WEATHER  
Breeze Sun ☒ Clear ☐ Overcast ☐ Rain ☐ Snow ☐  
TEMP To 22 22-50 50-70 70-85 85-100  
WIND Sst ☒ Moderate ☐ High  
HUMIDITY Dry ☒ Moderate ☐ Humid

SUB-CONTRACTORS ON SITE: WCC HAB TEAM #2

EQUIPMENT ON SITE: HAB KIT

WORK PERFORMED (INCLUDING SAMPLING):

SAMPLED	1202	IOWA	3	TOTAL	LEAD
	1205	IOWA	3		
	1005	WASHINGTON	3		
	900	IOWA	6		
	906				
	915				
	916				
	1208				
	1218				
	1229				
	805	1032 <sup>CP</sup> WASHINGTON			
	821	1034 <sup>CP</sup> WASHINGTON			
SOIL SAMPLED IAW SOP #1					
DECON IAW SOP #6					
ABANDON BORING IAW SOP #7					
DOCUMENTATION IAW SOP #5					

PROJECT NLTSS PDF 1 REPORT NO. \_\_\_\_\_  
JOB NO. Work Order # 0021 DATE 4/6/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)  
NONE

HEALTH AND SAFETY LEVELS AND ACTIVITIES.  
MOD LEVEL D PPE  
SAMPLING + DECON PERFORMED

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:  
1202 IOWA FRONT YARD SAMPLED  
BEFORE STARTING BACK YARD OWNER STATED  
HE CHANGED HIS MIND AND DID NOT  
WANT US TO SAMPLE. WE DID NOT  
SAMPLE BACK YARD.  
1205 Iowa Front Yard Not Sampled due to plants and flowers.  
1005 Washington Not<sup>REF</sup> Front Yard Not Sampled due to gravel.

SPECIAL NOTES

TOMORROW'S EXPECTATIONS SAMPLE IOWA, WASHINGTON.

BY Mary Mallone TITLE FIELD TECHNICIAN



PROJECT NLTS PDF 1

REPORT NO. \_\_\_\_\_

JOB NO. Work Order # 0021

DATE 7 APRIL 92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

1004	Iowa	3	Q.A. SAMPLES
1014	↓	3	↓
1030	↓	3 Duplicates + 3	↓
1302	WASHINGTON	3 Duplicates + 3	↓

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MODIFIED LEVEL "D" PPE  
 DECON T SAMPLING PERFORMED

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

1004 IOWA → ~~NO~~ NO SAMPLE TAKEN IN  
 1028 IOWA → FRONT YARD DUE TO STONE + SHRUBS.  
 1018 IOWA NOT SAMPLED DUE TO LOCKED GATE  
 AND NO ONE HOME

SPECIAL NOTES

TOMORROW'S EXPECTATIONS

DENVER, OHIO, W201A, ROCK ROAD.

2 of 2

Mark Walker FIELD TECHNICIAN



# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT NLTSS PDFI  
JOB NO. Work Order # 0021  
CONTRACT NO. DACW45-90-D-0008

DATE 8 APRIL 92

DAY 

S	M	T	W	TH	F	S
			X			

WEATHER	Brcs Sun	Clear	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85-100
WIND	St	Moder	Hgt	Report No.	
HUMIDITY	Dry	Moder	Humid		

SUB-CONTRACTORS ON SITE: WCC HAB TEAM #2

EQUIPMENT ON SITE: HAB KIT

WORK PERFORMED (INCLUDING SAMPLING):

			3	TOTAL LEAD
2025	BRYAN		6	
2035	↓			
2037	↓			
2503	DENVER			
2507	↓			
2619	↓			
2026	OHIO			
2028	↓			
2009	ROCK ROAD			
2636	W. 20 <sup>TH</sup>			
OPP 2206	↓			
2221	IOWA			

SAMPLED IAW SOP #1  
DECON PRE IAW SOP #6  
DECONTAMINATION IAW SOP #5  
ABANDON BORING IAW SOP #7

PROJECT: NLTSS PDFI  
JOB NO. Work Order # 0021

REPORT NO. \_\_\_\_\_

DATE 8 APRIL 92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MODIFIED LEVEL "D" PPE  
PERSON & SAMPLING PERFORMED

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

2025 DRYAN, FRONT YARD WAS ALL  
TILLED, ONLY ONE BORING DONE

SPECIAL NOTES.

QUESTIONS FROM KATHY ANDREA WERE  
REFERRED TO C. PAVELKA

TOMORROW'S EXPECTATIONS:

REYNOLDS & IDWA

BY Mark Wallace TITLE FIELD TECHNICIAN

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT NLTSS PDFI  
JOB NO. Work Order # 0021  
CONTRACT NO. DACW45-90-D-0008

DATE 9 APRIL 92

DAY 

S	M	T	W	<b>X</b>	F	S
---	---	---	---	----------	---	---

WEATHER	Bright Sun	Clear <b>X</b>	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70 <b>X</b>	70-85	85-100
WIND	Sty <b>X</b>	Moist	High	Report No.	
HUMIDITY	Dry	Moist <b>X</b>	Humid		

SUB-CONTRACTORS ON SITE: W.C.C. HAB TEAM #2

EQUIPMENT ON SITE: HAB KIT

## WORK PERFORMED (INCLUDING SAMPLING):

1018	IOWA	6 TOTAL LEAD
1310	IOWA	
1549	EDWARDSVILLE ROAD	
1104 <del>1004</del> <sup>SEP</sup>	REYNOLDS	
1108 <del>1008</del> <sup>SEP</sup>		
1112		
1118 <sup>3</sup>		
1119		
1128		
1129		
1130		3 LEAD DUP.
927		
935		3 LEAD DUP.

SOIL SAMPLED IAW SOP #1  
PECON & PPE IAW SOP #6  
~~DATA~~ DOCUMENTATION IAW SOP #5  
ABANDON BIRINGS IAW SOP #7

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NLTSS PDFI

REPORT NO. \_\_\_\_\_

JOB NO. Work Order # 0021

DATE 9 APRIL 92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

1018 IOWA

3 Q.A. SAMPLES

1849 EDWARDSVILLE ROAD

+ 3 DUPS.

935 REYNOLDS

1113

↓ + 3 DUPS.

1129



HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD. LEVEL "D" PPE  
PIECEN & SAMPLING PERFORMED

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

ELIZABETH & Kennedy

BY M. Hallor

TITLE FIELD TECHNICIAN

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT NLTSS PDEI  
JOB NO. Work Order # 0021  
CONTRACT NO. DACW45-90-D-0008

DATE 10 APRIL  
DAY 

S	M	T	W	TH	F	S
					X	

WEATHER	Brry Sun	Clear	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85 up
WIND	Still	Light	High	Report No.	
HUMIDITY	Dry	Light	Humid		

SUB-CONTRACTORS ON SITE: W.C.C. HAB TEAM #2

EQUIPMENT ON SITE: HAB KIT

WORK PERFORMED (INCLUDING SAMPLING):

1604	KENNEDY	6	TOTAL LEAD
1605	↓		
1607	↓		
1608	↓		
1610	↓		
1019	MS CAMBRIDGE		
1023	↓		
1916	ELIZABETH		
1601	↓		
1603	↓		
1608-	↓		
1611	↓		

SOIL SAMPLED IAW SOP #1  
PECON & PPE IAW SOP #6  
DOCUMENTATION IAW SOP #5  
ABANDON BORINGS IAW SOP #7

ER 1110-1-263  
1 OCT 90

(Continuation Sheet)

PROJECT NLTSS PDF I

REPORT NO. \_\_\_\_\_

JOB NO. Work Order # 0021

DATE 4/10/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

~~MOD. MW~~ ~~LEAD~~

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD. LEVIED "D" PPE  
DECON & SAMPLING PERFORMED

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

None

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

600 Block Mercedes.

BY Mark M. M... TITLE FIELD TECHNICIAN

ER 1110-1-263  
1 Oct 90

DATE

4/13/92

DAY

S ☒ M ☐ T ☐ W ☐ TH ☐ F ☐ S

## A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT NLTSS PDFI  
JOB NO. Work Order # 0021  
CONTRACT NO. DACW45-90-D-0008

WEATHER

Brief Sun	Clear <input checked="" type="checkbox"/>	Overcast <input checked="" type="checkbox"/>	Rain	Snow
Temp To 32	<del>32</del>	<del>32</del>	70-85	85-100
Wind St	Mod	Hgh	Report No.	
Humidity Dry	<input checked="" type="checkbox"/>	Humid		

SUB-CONTRACTORS ON SITE:

WCC HAB Crew #2

EQUIPMENT ON SITE:

HAB Kit

WORK PERFORMED (INCLUDING SAMPLING):

Sampled 907 Madison 6 Samples Total Lead  
917 ~~Meredocia~~ CFP Madison  
606 Meredocia  
620  
616  
626  
628  
636  
609 Salvesten  
615  
633  
637

Soil Sampling IAW SOP 1  
Decon IAW SOP 6  
Documentation IAW SOP 5  
Boring Abandonment IAW SOP 7

HP 1110-1-203  
1 Oct 90

(Continuation Sheet)

PROJECT NLTSS PDFI

REPORT NO. \_\_\_\_\_

JOB NO. Work Order # 0021

DATE 4/13/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level D PPE  
Decon & Sampling performed

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Couldn't Sample 909 Madison because yard  
was paved and gravel fill.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Sample Delmar & 22nd Streets

BY

E. S. Ry

TITLE

Ecologist



# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Buchholz  
PROJECT NLTSS PDEI  
JOB NO. Work Order 0021  
CONTRACT NO. DACW45-90-D-0008

DATE 1/14/92  
DAY 

S	M	<input checked="" type="checkbox"/>	W	TH	F	S
---	---	-------------------------------------	---	----	---	---

WEATHER	Brief Sun	Clear <input checked="" type="checkbox"/>	Overcast <input checked="" type="checkbox"/>	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85 up
WIND	<input checked="" type="checkbox"/>	Moder	High	Report No.	
HUMIDITY	<input checked="" type="checkbox"/>	Moder	Humid		

## SUB-CONTRACTORS ON SITE

WCC HAB Team 2

## EQUIPMENT ON SITE

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

<u>Sampled</u>	<u>1240</u>	<u>22nd</u>	<u>3 Total lead + 3LQ</u>
	<u>1718</u>	<u>Delmar</u>	<u>6 Total lead + 3LQ + 3LQ</u>
	<u>1729</u>		<u>6 Total lead</u>
	<u>2016</u>		<u>+ 3LQ + 3LQ</u>
	<u>2019</u>		<u>↓</u>
	<u>2124</u>		<u>3 Total lead + 3LQ + 3LQ</u>
	<u>2133</u>		<u>6 Total lead</u>
	<u>2154</u>		<u>↓</u>
	<u>2209</u>		<u>+ 3LQ + 3LQ</u>
	<u>2254</u>		<u>3 Total lead + 3LQ</u>
	<u>2256</u>		<u>6 Total lead</u>
	<u>2257</u>		<u>↓</u>
	<u>2263</u>		<u>↓</u>

Soil Sampling IAW SOP 1  
Documentation IAW SOP 5  
Decor IAW SOP 6  
Boring Abandonment IAW SOP 7

PROJECT NLTSS PDFI  
JOB NO. Work Order #0021 DATE 4/14/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Took 3 QA Samples at 1716 Delmar + 3LD  
2016 + 3LD  
2124 + 3LD  
2209 + 3LD  
2254  
1240 22<sup>nd</sup>

HEALTH AND SAFETY LEVELS AND ACTIVITIES

Modified Level D PPE

Decon & Sampling performed

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

No backyard at 1729 Delmar Gate locked  
2124  
2254 ↓ Gate locked  
and 1240 22<sup>nd</sup>

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

Sample Delmar, Edison & Cleveland Sts.

BY E. A. Pye TITLE Geologist

DATE 4/15  
DAY 

S	M	T	W	TH	F	S
			X			

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Buchholz  
PROJECT NLTSS PDFA  
JOB NO. Work Order # 021  
CONTRACT NO. DALW45-90-D-0008

WEATHER	Brk Sun	Clear	Overcast	Rain	Snow
	X	X	X	X	
TEMP	To 32	32-50	50-70	70-85	85-100
			X	X	X
WIND	St	Moder	Hgt	Report No.	
	X	X			
HUMIDITY	Dry	Moder	Humid		
	X	X	X		

## SUB-CONTRACTORS ON SITE:

WCC HAB Crew #2

## EQUIPMENT ON SITE:

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled	Cleveland	2116	6 Total Lead
		2133	
		2134	
		2138	
		2141	
		2158	
	State	2256	3 Total lead
	Dehman	1633	6 Total lead
	<del>Edison</del>		
	Edison	1708	
		2052	

Soil Sampling	AW SOP	1
Decon	AW SOP	6
Documentation	AW SOP	5
Boring Abandonment	AW SOP	7

PROJECT NLTSS PDFI  
JOB NO. Work Order #0021 DATE 4/15/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified: Level D PPE  
Decon & Sampling performed

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

1302 18<sup>th</sup> Front yard filled.  
Back yard only accessed through  
house

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Sample IOWA, GRANO, DELMAR, etc.

BY E. A. Pugh TITLE Geologist

4/16/92

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT NLTSS PDFI  
JOB NO. Work Order # 0021  
CONTRACT NO. DACW45-90-D-0008

WEATHER	Bar	Wind	Temp	Hum	Cloud
	29.5	10	50	70	10
TEMP	To 22	22:50	50	70	10
WIND	SW	10	10	10	10
HUMIDITY	70	70	70	70	70

## SUB-CONTRACTORS ON SITE:

WCC H&B Crew #2

## EQUIPMENT ON SITE:

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled	1920 Benton	6 Total Lead + 3 LQ
	1931	
	1934	
	2101	+3LQ
	2119	+3LQ + 3LQ
	2151 Grand	
	2167 Grand	+2LQ
	1415 Madison	
	1420 Madison	+3LQ
	1421 Iowa	+3LQ + 3LQ
	1423 Iowa	

Sampling IAW SOP1  
Documentation IAW SOP5  
Drawn IAW SOP6  
Boring Abandonment IAW SOP7

BY EA Ry the Geologist

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)	
1920 Benton	3 lead samples @
2101	QA
2119	↓
2167 Grand	+ 3 lead dyp
1920 Madison	
1921 Iowa	+ 3 lead dyp
HEALTH AND SAFETY LEVELS AND ACTIVITIES	
Modified Level D PPE	
Sampling and dyp performed	
PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:	
Resident at 1939 Madison would allow us to sample	
SPECIAL NOTES:	
TOMORROW'S EXPECTATIONS	
Sample Grand & Benton SIS	

DATE 4/16/92

WORK ORDER # 001

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
 PROJECT NLTSS PDFI  
 JOB NO. Work Order # 0021  
 CONTRACT NO. DACW45-90-D-0008

4-17-90

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85-100
WIND	Cal	Light	High	Footing	
HUMIDITY	Dry	Light	Humid		

## SUB-CONTRACTORS ON SITE:

Woodward Clyde HAB Team #2

## EQUIPMENT ON SITE:

HAB kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled - 2264 Benton 6 Samples Total Lead  
 2252 " " 3 " " "  
 2251 Gravel 6 " " "  
 2253 Gravel 6 " " "

Soil Sampling IAW Sep #1.  
 Decon IAW Sep #6  
 Documentation IAW Sep #5.  
 Abandon Boring IAW Sep #7.

Project 1-7-11  
OSMO Work Order # 0021

DATE 4-17-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified level "D"

Decor & Sampling performed

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

None

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

Cleveland 2230 - Sample yard and driveway  
for battery chips (Remote Area Location)

MP1727 & MP1729 will take QA samples as requested by resident →

Kathy Andrieu.

Other Residents ca. 2200 Cleveland.

BY K. Silberman TITLE Staff Scientist



# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
 PROJECT NLTSS PDFI  
 JOB NO. Work Order # 0021  
 CONTRACT NO. DACW45-90-D-0008

7-21-72

WEATHER	Drizzle Sun	Clear	Overcast X	Rain	Snow
TEMP	To 22	22-30 X	32-70	70-85	85-100
WIND	Stl	Weak X	High	Report No.	
HUMIDITY	Dry	Weak X	Humid		

## SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants

## EQUIPMENT ON SITE:

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sample ID	Location	Notes	Samples Total	Lead
Sampled - 2250	Cleveland		6	
2257	" "		6	
2258	" "		6	
(3 Dups) 2262	" "		6	
2214	" "		6	
2225	" "		6	
(3 Dups) 2117	Edison		3	
2118	" "		3	
2259	Delmar		6	
2138	Edison		6	
(3 Dups) 2142	" "		6	
2222	Delmar		6	

Soil Sampling IAW Sop #1.

Decon & JPPE IAW Sop #6

Documentation IAW Sop #5.

Abandoned Boring IAW Sop #7.

OSNO Work Order # 0001

DATE 4-21-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

2250 Cleveland - 3 Samples QA  
 2262 Cleveland - " " + 3 Dups  
 2117 Edison - " " + 3 Dups  
 2142 Edison - 3 Samples QA - 3 Dups

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified level "D".

Decon & Sampling Performed.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Edison 2118 - No front yard.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

Sample Madison, Cleveland & State.

BY 40166 USE Staff Scientist

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
 PROJECT INLTSS PDFI  
 JOB NO. Work Order # 0021  
 CONTRACT NO. DACW45-90-D-0008

DATE 4-22-91

DAY	Mo	Tu	We	Th	Fr	Sa	Su
						X	

WEATHER	Bryt Sun	Clear	Overcast	Rain	Snow
		X			

TEMP	To 22	22-30	50-70	70-85	85-100
			X		

WIND	Still	Light	High	Report No.	
		X			

HUMIDITY	Dry	Light	Humid
		X	

## SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants

## EQUIPMENT ON SITE:

HAB kit

## WORK PERFORMED (INCLUDING SAMPLING):

- Sampled - 2025 Madison 6 Samples Total Lead  
 2157 State " " "  
 2230 Cleveland " " "  
 1429 Madison " " "  
 1439 Madison 3 Samples Total Lead  
 2247 State 6 Samples Total Lead  
 2228 State " " "  
 2230 State " " "  
 (1 Dup.) - (2230 State CFP 5 Samples TLP.)  
 Cleveland

Soil Sampling IAW Sop #1.  
 Decan & PPE IAW Sop #6  
 Documentation IAW Sop #5  
 Abandon Dory IAW Sop #7.

PROJECT MULTI-PHASE AGENT 1  
JOB NO. Work Order # 0021 DATE 4-22-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Cleveland 2230 - 1 QA sample, 1 DLP  
- 1 DLP

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level "D"  
Decon & Sampling performed.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Unable to sample 22nd St. 1423, no  
front or back yard.  
Madison 1439 - Unable to take B2, all  
gravel.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS.

Sample Gravel

BY G. H. H. H. TITLE Staff Scientist

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
 PROJECT INLTSS PDFI  
 JOB NO. Work Order # 0021  
 CONTRACT NO. DACW45-90-D-0008

4-23-92

1	2	3	4	5	6	7	8	9	10	11	12
										X	

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
		X			
TEMP	To 22	22-30	30-70	70-85	85 up
			X		
WIND	Still	Light	Mod		
			X		
HUMIDITY	Dry	Mod	Humid		
			X		

SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants

EQUIPMENT ON SITE:

HAB K:t

WORK PERFORMED (INCLUDING SAMPLING):

Sampled - 2204 Grand - 6 Samples Total Lead (3 Dups)  
 2206 Grand - 6 Samples Total Lead  
 2224 " " - " " "  
 2225 Grand - " " "  
 2216 Grand - " " "  
 2247 " " - " " "  
 2246 " " - " " "  
 1714 Grand - 3 Samples Total Lead  
 1401 Grand - 6 Samples Total Lead  
 1415 Grand - " " "  
 2124 Adams - " " "

Soil Sampling IAW Sap #1  
 Decon & PPE IAW Sap #6  
 Documentation IAW Sap #5  
 Aberdeen Boring IAW Sap #7

DATE 4-23-92

OSNO Work Order # 0031

DATE 4-23-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

2204 Grand - 3 QA + 3 Dups  
2220 Grand - 3 QA samples  
2247 Grand - 3 QA samples

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level "D"

Dicon & Sampling performed

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

None

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

2000 Bk Cleveland, 2200 Grand, 2200 Iowa

BY X. J. J. J. TITLE Staff Scientist

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
 PROJECT NLTSS PDFI  
 JOB NO. Work Order # 0021  
 CONTRACT NO. DACW45-90-D-0008

4/24/92

DAY 5 4 3 2 1 X

WEATHER	Bright Sun	Cloudy	Overcast	Rain	Snow
TEMP	To 22	22-50	50-70	70-85	85-100
WIND	Still	Light	High	Report No.	
HUMIDITY	Dry	Moist	Humid		

SUB-CONTRACTORS ON SITE: WCC HAB TEAM #2

EQUIPMENT ON SITE: HAB KTD<sup>CP</sup> Equipment Kit

## WORK PERFORMED (INCLUDING SAMPLING):

SAMPLED:	1940	CLEVELAND	6	TOTAL LEAD
	2020	↓		
	2036			
	2140	↓		
	2163	DELMAR		
	2249	GRAND		
	2258	↓		
	2021	LEE		
	2209	IOWA		
	2247	↓		
	2251	↓		

SOIL SAMPLED IAW SOP# 1  
 DECON TPPE IAW SOP# 6  
 DOCUMENTATION IAW SOP# 5  
 ABANDON BORINGS IAW SOP# 7

NOTE: 11.12  
JOB NO. Work Order # 0031

DATE \_\_\_\_\_

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD. LEVEL "D" PPE  
DECON & SAMPLING PERFORMED

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

2021 CLEVELAND NOT SAMPLED  
SINCE ENTIRE YARD WAS ALL PLANTED  
OR TILLED.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

BY Mark Maline TITLE FIELD TECHNICIAN



# A-E DAILY QUALITY CONTROL REPORT

CCE PROJECT MANAGER TERRY BUCHHEITZ  
PROJECT ULTSS PDE  
JOB NO. Work Order # 0021  
CONTRACT NO. DACW45-90-D-0008

4-27-91

WEATHER	Sun	Clear	Overcast	Part	Snow
TEMP	70-82	82-85	82-70	70-65	65-50
WIND	SE	W	W	W	W
HUMIDITY	Dry	W	W	W	W

## SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants

## EQUIPMENT ON SITE:

HAB kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled - 938 Neidringhaus - 3 samples Total Lead  
809 " " - 6 Samples Total Lead  
1215 22nd St. - " " "  
2041 State - " " "  
2024 Benton - " " "  
1641 Delmar - 3 Samples Total Lead  
11634 Cleveland - 6 Samples Total Lead  
11640 " " - " " "  
~~SP 1436 State~~  
1408 State - 6 Samples Total Lead

All sampling IAW Sep #1  
Decas IAW # 6  
Documentation IAW # 5  
Abandon Boring IAW # 7

OWS 1011 11 11

4-27-72

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES

Modified level "D"

Decon & Sampling Performed

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Neiderhays 938 - Unable to take B<sub>2</sub>,  
all gravel.

Delmar 1141 - No backwash took 2  
samples in front.

State 1436 - Unable to sample, all  
gravel.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

Madison → State (1000-1300), @ 1200-1400 Washington

K. Decker Staff Scientist

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
 PROJECT NLTSS PDFI  
 JOB NO. Work Order # 0021  
 CONTRACT NO. DACW45-90-D-0008

7-28-92

DATE	7	28	92
WEATHER	Breezy Sun	Clear	Overcast
TEMP	To 22	22-30	52-75
WIND	SE	MOOR	HIGH
HUMIDITY	Dry	MOOR	HIGH

## SUB-CONTRACTORS ON SITE:

Woodward - Clyde Consultants

## EQUIPMENT ON SITE:

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled -	1310 State	6 Samples Total	Lead
	1320 " "	3 Samples Total	Lead
	1322 " "	" "	"
	822 Iowa	6 Samples Total	Lead
+ (3 Dup)	1022 State	6 Samples Total	Lead
+ (3 Dup)	1003 Washington	3 Samples Total	Lead
	1215 Washington	6 Samples Total	Lead
	1235 " "	" "	"
	1405 " "	" "	"
+ (3 Dup)	1402 " "	" "	"
	2236 Edison	6 Samples Total	Lead
	2224 Edison	" "	"
	2208 Edison	" "	"
	2204 Edison	" "	"

All sampling IAW Sop #1.  
 Decan IAW Sop #6.  
 Documentation IAW Sop #5.  
 Abandon Boring IAW Sop #7.

PROJECT W-117 111  
 LOG NO Work Order # 0031

DATE 4-28-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

3 QA samples - State 1320  
 3 QA & 3 Dup - 1022 State  
 3 QA & " " - 1003 Washington  
 3 QA 1215 Washington  
 3 QA & 3 Dup - 1402 Washington  
 3 QA - 2236 Edison  
 3 QA - 2208 Edison

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified level "D"

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

State 1320 - Unable to take  
 B2 no backyard  
 State 1322 - No front yard  
 Washington 1003 - Unable to take  
 B2 all gravel in  
 backyard  
 State 1114 - Unable to sample - all gravel  
 in front and backyard.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Grand, Greenwood, Tawa &  
 Madison

BY Kleber TITLE Staff Scientist

ER 1110-1-263

1 Oct 90

DATE

4-28-92

DAY

S	M	X	W	Th	F	S
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# A-E DAILY QUALITY CONTROL REPORT

WEATHER

Brgt Sun	Clear X	Overcast	Rain	Snow
-------------	------------	----------	------	------

TEMP

To 32	32-50	50-70 X	70-85	85 up
-------	-------	------------	-------	-------

WIND

Still	Light X	Mod	Heavy	Storm
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HUMIDITY

Dry	Mod X	Humid	Very Humid	Sticky
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COE PROJECT MANAGER

Terry Buchholz

PROJECT

NLSS PDF

JOB NO.

Work Order 0021

CONTRACT NO.

DACW45-90-D-0008

## SUB-CONTRACTORS ON SITE:

Occusafe Inc. - Home Inspectors (Certified Lead Paint Inspector  
and/or Certified Industrial Hygienist)

## EQUIPMENT ON SITE:

Mobil Telephone, Personal Vehicle

## WORK PERFORMED (INCLUDING SAMPLING):

Interior Visual Home Inspections conducted IAW SOP #11  
Home Inspection Survey (HIS)  
Home Inspections Scheduled = 18 HIS ATTEMPTED = 15 HIS Complete = 14

Home Inspections Completed at:

- 2246 Cleveland
- 2243 Cleveland
- 1724 Olive
- 1725 Olive
- 2157 Cleveland
- 1717 Elizabeth
- 2121 Edison
- 1608 Kennedy
- 1713 Walnut
- 1424 Grand
- 1028 Greenwood
- 1941 Benton
- 2145 Lee
- 821 Niedringhaus

ER 1110-1-263

1 Oct 90

PROJECT NLTSS PDFI

REPORT NO. \_\_\_\_\_

JOB NO. Work Order #0021

DATE 4-28-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

None

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

N/A = street clothes

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

None

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

19 HIS Scheduled

BY

Cynthia Paulk

TITLE

Assist. Proj. Engr.

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
 PROJECT NLTSS PDFI  
 JOB NO. Work Order # 0021  
 CONTRACT NO. DACW45-90-D-0008

4-29-92

DAY S M T W T F S

WEATHER	Brief Sun	Clear	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85-100
WIND	Still	Light	High	Record No.	
HUMIDITY	Dry	Moist	Humid		

SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants

EQUIPMENT ON SITE:

HAB Kit

WORK PERFORMED (INCLUDING SAMPLING):

Samples:

1136 Greenwood 6 Samples Total Lead  
1112 " " " " " "  
1111 " " " " " "  
1238 Grand 3 Samples Total Lead  
1018 Grand 6 Samples Total Lead  
1012 Grand " " "  
1217 Iowa " " "

Sampled IAW Sap #1.  
Decaned IAW Sap # 6.  
Documentation IAW Sap # 5.  
Abandoned Boring IAW Sap # 7.

PROJECT NLTS 1.1

JOB NO Work Order # 0031

DATE 4-29-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Mod-Fied Level "D"

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

None CPP 10/223 - Resident changed mind. Did not want  
her yard sampled. Took her name off the  
list to sample.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Allen, Grand, Madison, Kennedy,  
McCambridge, Reynolds

BY K. K. K. TITLE Staff Scientist



ER 1110-1-263  
1 OCT 90

DATE

DAY

S	M	T	W	TH	F	S
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## A-E DAILY QUALITY CONTROL REPORT

WEATHER

Brgt Sun	Clear X	Overcast	Rain	Snow
To 32	32-50	50-70	70-85	85-100
Sea	Moder	High	Good	Bad
Dry	Moder	Humid		

TEMP

WIND

HUMIDITY

COE PROJECT MANAGER

Terry Buchholz

PROJECT

NLTSS PDF I

JOB NO.

Work Order 0021

CONTRACT NO.

DACW45-90-D-0008

### SUB-CONTRACTORS ON SITE:

Oceusafe Inc - Home Inspectors (Certified Lead Paint Inspector and/or  
Certified Industrial Hygienist)

### EQUIPMENT ON SITE:

Mobil Phone, Personal Vehicle

### WORK PERFORMED (INCLUDING SAMPLING):

Interior Visual Home Inspections conducted IAW SOP #11

Home Inspection Survey (HIS)

Home Inspections Scheduled = 19 HIS ATTEMPTED = 17 HIS Completed = 15

Home Inspections Completed at: 2119 STATE

2253 DELMAR

901 NIEDERKINGHAUS

2257 DELMAR

1443 GRAND

2264 CLEVELAND

2268 CLEVELAND

2128 ADAMS

1700 EDISON

2235 EDISON

1603 ELIZABETH

2131 CLEVELAND

1420 MADISON

2235 DELMAR

2233 DELMAR

ER-1110-1-263

1 Oct 90

(Continuation Sheet)

PROJECT NLTSS PDFI

REPORT NO. \_\_\_\_\_

JOB NO. Work Order #0021

DATE 4-29-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

None

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

N/A - Street clothes

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

None

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

21 HES Scheduled

BY

Cynthia Paulk

TITLE

Ass. Proj. Eng.

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHEIZ  
 PROJECT NLTSS PDFI  
 JOB NO. Work Order # 0021  
 CONTRACT NO. DACW45-90-D-0008

4/30/92

WEATHER	Clear	Overcast	Rain	Snow
TEMP	To 11	22-50	50-70	70-85
WIND	SW	W	N	NE
HUMIDITY	Dry	W	M	H

## SUB-CONTRACTORS ON SITE:

Woodward Clyde Consultants

## EQUIPMENT ON SITE:

HAB kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled - 2254 Delmar - 3 Total Samples for Lead  
 + (3 Digs) 930 Reynolds - 6 Samples Total Lead  
 911 McConbridge - " " "  
 928 Reynolds - " " "  
 McConbridge 913 - " " "  
 814 Melissa - " " "  
 1729 Delmar - 3 Samples Total Lead  
 1714 Kennedy - 6 Samples Total Lead  
 1014 Altan - " " "  
 1106 Grand - " " "  
 1320 Grand - " " "

All sampling EAW Sep # 1.  
 Decon EAW Sep # 6.  
 Documentation EAW Sep # 5.  
 Abandon Boring EAW Sep # 7.

08140

Project # 0021

Date 4-30-72

## QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

930 Reynolds 3 QA samples 2 Dips  
814 Madison " "  
1106 Grand 3 QA samples

## HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified level "D"

Doses &amp; Sampling performed.

## PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Washington road all gravel is backfilled.

## SPECIAL NOTES.

## TOMORROW'S EXPECTATIONS

Lincoln, Delmar & 19th, Civic Park,  
City Hall, Public Library, Delmar

BY K. Rhodes

Title Staff Scientist

ER 1110-1-263

1 Oct 90

DATE

4-30-92

DAY

S	M	T	W	TH	F	S
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# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER

Terry Buchholz

PROJECT

NLTSS PDF

JOB NO

Work Order #0021

CONTRACT NO

DACW45-90-D-0008

WEATHER

Bright Sun	Clear	Overcast	Rain	Snow
	X	X		
Temp	To 32	32-50	50-70	70-45
	X			
Wind	Still	Light	High	Report No.
	X			
Humidity	Dry	Moist	Humid	
	X			

## SUB-CONTRACTORS ON SITE:

Oreusafe, Inc. - Home Inspectors (Certified Lead Paint Inspector and/or Certified Industrial Hygienist)

## EQUIPMENT ON SITE:

Mobil Phone, Personal Vehicle

## WORK PERFORMED (INCLUDING SAMPLING):

Interior Visual Home Inspection conducted IAW SOP #11  
Home inspections scheduled = 21 HISA attempted = 19 HISA completed = 17

Home Inspections Completed at: 919 Washington

921 WASHINGTON

2247 DELMAR

1032 REYNOLDS

1000 REYNOLDS

633 SALVETER

2228 STATE

2230 STATE

2158 STATE

1602 SPRUCE

1747 MAPLE

830 VICTORIAN HAUS

2256 BENTON

2210 STATE

1022 STATE

2029 LEE

1030 REYNOLDS

SHEET

1 of 2

ER 1110-1-263

1 Oct 90

PROJECT NLTSS PDFI

REPORT NO. \_\_\_\_\_

JOB NO. Work Order #0021

DATE 4-30-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

None

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

N/A = Street clothes

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

None

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

17 HES scheduled

BY

C. Pavelka

TITLE

Asst. Proj. Eng.

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT NLTSS PDFI  
JOB NO. Work Order # 0021  
CONTRACT NO. DACW45-90-D-0008

DATE 5-1-92

1	2	3	4	5	6	7	8	9	10	11	12
											X

WEATHER	Brgt Sun	Clear X	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85-100 X
WIND	Stl	Light X	High	Report No.	
HUMIDITY	Dry	Moist X	Humid		

## SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants

## EQUIPMENT ON SITE:

HAB K+

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled -

<u>G.C. Civic Park</u>	<u>1319 Niedringhaus</u>	<u>15 Samples Total</u>	<u>Lea</u>
<u>G.C. Public Library</u>	<u>2001 Decker</u>	<u>6 Samples Total</u>	<u>Lea</u>
<u>G.C. City Hall</u>	<u>2000 Edison</u>	<u>9 Samples Total</u>	<u>Lea</u>
<u>G.C. Vacant Lot Property</u>	<u>1241 Niedringhaus</u>	<u>6 Samples Total</u>	<u>Lea</u>
<u>G.C. Property - Vacant Lot</u>	<u>1300 19th St.</u>	<u>1 " " "</u>	
<u>Lincoln Place Community Center</u>	<u>822 Niedringhaus</u>	<u>9 Samples Total</u>	<u>Lea</u>
<u>G.C. Property - Vacant Lot</u>	<u>840 " " "</u>	<u>12 Samples Total</u>	<u>Lea</u>

All sampling IAW Sep #1.  
Decker IAW Sep #6.  
Documentation IAW Sep #5.  
Abandon Boring IAW Sep #7.

PROJECT

MP 1727 + 1729

REVISIONS

OSNO

Work Order # 0031

DATE

5-1-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified level "D"

Decomposition Sampling performed.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Delmar 2101 - Unable to <sup>SP</sup> sample  
all paved lot.

Delmar 2100 - Unable to sample  
"Freight Co." all paved.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

MP 1727 + MP 1729 Kathy Andria (Split-Samples)

Maple 1600 + 1700 Blocks

BY K. Andria

TITLE Staff Scientist



ER-1110-1-263  
1 Oct 90

DATE

DAY

S	M	T	W	TH	F	S
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## A-E DAILY QUALITY CONTROL REPORT

WEATHER

Bryt Sun	Clear	Overcast	Rain	Snow
Temp 32-32	32-50	50-70	70-85	85-100
Wind S-E	Light	Light	Light	Light
Humidity Dry	Light	Light	Light	Light

COE PROJECT MANAGER

PROJECT

JOB NO.

CONTRACT NO.

Terry Buchholz

MLTSS PDF

Work Order 0021

DACW45-90-D-0008

### SUB-CONTRACTORS ON SITE:

Oreusafe, Inc - Home Inspectors (Certified Lead Paint Inspectors  
and/or Certified Industrial Hygienist)

### EQUIPMENT ON SITE:

Mobil Phone, Personal Vehicle

### WORK PERFORMED (INCLUDING SAMPLING):

Interior Visual Home Inspections conducted IAW SOP #11  
Home Inspection scheduled = 17 HIS attempted = 17 HIS completed = 9

Home Inspection Completed at:

- 1015 GREENWOOD
- 1604 KENNEDY
- 1633 MAPLE
- 2150 STATE
- 2137 EDISON
- 1423 IOWA
- 1918 ELIZABETH
- 1225 GRAND
- 2235 STATE

ER-1110-1-263

1 Oct 90

(Continuation Sheet)

PROJECT NLTSS PDFI

REPORT NO. \_\_\_\_\_

JOB NO. Work Order #0021

DATE 5-1-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

None

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

N/A - Street Clothes

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

None, -0

SPECIAL NOTES. Had A Lot of No Shows due to Friday Afternoon  
and a pretty day.

TOMORROW'S EXPECTATIONS:

13 HES SCHEDULED

BY Cynthia Parikh TITLE Asst. Proj. Eng.

ER 1110-1-263  
1 Oct 90

DATE

5-2-92

DAY

S	M	T	W	TH	F	S
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# A-E DAILY QUALITY CONTROL REPORT

WEATHER

Bright Sun	Clear	Overcast	Rain	Snow
	X			
TEMP	70-72	72-80	80-70	70-45
WIND	SE	W	W	W
HUMIDITY	Dry	Moist	Humid	

CQE PROJECT MANAGER

Terry Buchholz

PROJECT

NLTSS PDFI

JOB NO

Work Order #0021

CONTRACT NO

DACW45-90-D-0008

SUB-CONTRACTORS ON SITE:

Occusafe Inc - Home Inspector (Certified Lead Paint Inspector and/or Certified Industrial Hygienist)

EQUIPMENT ON SITE:

Mobil Phone, Personal Vehicle

WORK PERFORMED (INCLUDING SAMPLING):

Interior Visual Home Inspections conducted T.A.W. SOP #11  
Home Inspection Survey (HIS)  
Home Inspections Scheduled = 13 HIS Attempted = 12 Completed = 12

Home Inspections Completed at:

2153A BENTON  
2153 BENTON  
2155A BENTON  
2155 BENTON  
2219 EDISON  
1747 OLIVE  
2256 STATE  
2137A EDISON  
2135 DELMAR (upstairs)  
2153 DELMAR  
2259 DELMAR  
2255 EDISON

SHEET

1 of 2

ER 1110-1-263

1 Oct. 90.

PROJECT - NLTSS PDFI

REPORT NO. \_\_\_\_\_

JOB NO. Work Order # 0021

DATE 5-2-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

None

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

N/A - Street Clothes

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

None

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

22 AIS Scheduled

BY Cynthia Pavelle TITLE Ass. Proj. Eng.

DATE 5/4/92

DAY S X

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT NLTSS PDFI  
JOB NO. Work Order # 0021  
CONTRACT NO. DACW45-90-D-0008

WEATHER	Brief Sun	Clear	Overcast	Rain	Snow
		<u>X</u>	<u>X</u>		
TEMP	To 32	32-50	50-70	70-85	85 up
			<u>X</u>	<u>X</u>	
WIND	Still	Light	Mod	Report No.	
		<u>X</u>			
HUMIDITY	Dry	Moist	Humid		
	<u>X</u>				

## SUB-CONTRACTORS ON SITE:

Woodward Clyde HAB Team 2

## EQUIPMENT ON SITE:

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

<u>Sampled</u>	<u>2019 Lee</u>	<u>6</u>	<u>Total lead</u>
	<u>2119 Lee</u>	<u>6</u>	<u>" "</u>
	<u>1737 Maple</u>	<u>6</u>	<u>" "</u>
	<u>1733</u>	<u>6</u>	<u>" "</u>
* Kathy Andria's Property	<u>1729</u>	<u>3</u>	<u>" " + 3 LO</u>
Request's QA Results	<u>1727</u>	<u>6</u>	<u>" " + 6 LO</u>
	<u>1708</u>	<u>6</u>	<u>" "</u>
	<u>1748</u> ✓	<u>6</u>	<u>" "</u>
	<u>2015 Washington</u>	<u>6</u>	<u>" " + 3LO + 3LO</u>
	<u>2108</u> ↓	<u>6</u>	<u>" " + 3LO</u>
	<u>1510 23rd</u>	<u>6</u>	<u>" " + 3LO + 3LO</u>
	<u>2232 State</u>	<u>6</u>	<u>" "</u>
	<u>2239</u> ↓	<u>6</u>	<u>" "</u>

Soil Sampling IAW SOP 1

Documentation IAW SOP 5

Decon IAW SOP 6

Boring Abandonment IAW SOP 7

PROJECT NLTS PDF 1

OSNO Work Order # 0021

DATE 5/4/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Took 3 QA Samples @ 1729 Maple  
2015 Washington  
2108 "  
1510 23<sup>rd</sup>  
+ 3 QA @ 1727 Maple  
+ 3 LD @ 2015 Washington  
and 1510 23<sup>rd</sup>

HEALTH AND SAFETY LEVELS AND ACTIVITIES

Modified Level D PPE  
Decon & Sampling performed

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Unable to sample backyard at 1729 Maple because  
of tilling

SPECIAL NOTES

Kathy Andria who requested split samples had QA samples  
taken at Maple 1727 + 1729 Sample IDs: SMP1727100A0LQ, --200A0LQ?  
Address: 1729 Maple SMP1727100B0LQ, --200B0LQ  
Granite City, IL 62040 SMP1727100C0LQ, --200C0LQ  
SMP1729100A0LQ

TOMORROW'S EXPECTATIONS

Sample Cleveland, Delmar, Benton SMP1729100B0LQ  
SMP1729100C0LQ

Results should be mailed to:

BY E. J. Pye TITLE Geologist

ER-1110-1-263

1. OCT 90

DATE 5 MAY 92

DAY S M X W TH F S

A-E DAILY QUALITY  
CONTROL REPORT

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
		X			
TEMP	To 32	32-50	50-70	70-85	85-100
			X		
WIND	0-5	6-10	11-20	21-30	31-40
			X		
HUMIDITY	Dry	Moist	Humid		
	X				

GOC PROJECT MANAGER: Teresa BuchholzPROJECT: NLTSS PDF IJOB NO: Work Order 00021CONTRACT NO: DACW45-90-D-0008SUB-CONTRACTORS ON SITE: WCC HAB TEAM #2EQUIPMENT ON SITE: HAB KIT

## WORK PERFORMED (INCLUDING SAMPLING):

SAMPLED: 2103 BENTON 6 TOTAL LEAD

2218

2222

1630

CLEVELAND

1720

1728

1736

1732051

1127

DELMAR

1700

1723

2130

2134

2160

SOIL SAMPLED IAW SOP #1

DI-CON &amp; DPF IAW SOP #6

DOCUMENTATION IAW SOP #5

ABANDON BORINGS IAW SOP #7

ER-1110-1-263

1 Oct 90

PROJECT NLTSS PDFI  
JOB NO. Work Order #0021

REPORT NO. \_\_\_\_\_

DATE \_\_\_\_\_

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MODIFIED LEVEL "D" PPE  
DECON & SAMPLING PERFORMED

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

None

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

1600+1700 Blk Edison, 1600 Block of Spruce St., 1600+1700 Block of  
Olive

BY Mark Mallone TITLE FIELD TECHNICIAN



ER 1110-1-263

1 Oct 90

DATE

5-5-92

DAY

S	M	T	W	TH	F	S
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# A-E DAILY QUALITY CONTROL REPORT

WEATHER

Bkgs Sun	Clear	Overcast	Rain	Snow
To 32	32-50	50-70	70-85	85 to
Sun	Moist	Moist	Moist	Moist
WMO	Moist	Moist	Moist	Moist
Humidity	Moist	Moist	Moist	Moist

TEMP

WMO

HUMIDITY

COE PROJECT MANAGER

Terry Buchholz

PROJECT

NLTS PDF

JOB NO.

Work Order #0021

CONTRACT NO.

DACW45-90-D-0008

## SUB-CONTRACTORS ON SITE:

Oreusafe, Inc. - Home Inspectors (Certified Lead Paint Inspector and/or  
Certified Industrial Hygienist)

## EQUIPMENT ON SITE:

Mobil Telephone, Personal Vehicle

## WORK PERFORMED (INCLUDING SAMPLING):

Interior Visual Home Inspections conducted TAW SOP# 11  
Home Inspection Survey (HIS)  
Home Inspections Scheduled = 22 HIS ATTEMPTED = 18 HIS completed = 18

Home Inspections Completed at:

- 900 GRAND
- 900A GRAND
- 2208 CLEVELAND
- 2254 STATE
- 2247 GRAND
- 2247A GRAND
- 2247 GRAND REAR
- 2232 BENTON
- 1423 MADISON
- 2041 STATE
- 2201 CLEVELAND
- 2127 LEE
- 2218 EDISON
- 2218A EDISON
- 2219 EDISON
- 9133 CLEVELAND
- 8217 CLEVELAND
- 2246 GRAND

ER 1110-1-263

1 Oct 90

(Continuation Sheet)

PROJECT NLTSS PDFI  
JOB NO. Work Order #0021

REPORT NO. \_\_\_\_\_  
DATE 5-5-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

None

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

N/A - STREET CLOTHES

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Done

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

27 HLS SCHEDULED

BY

Cynthia Pavelka

TITLE

Ass. Proj. Eng.

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT NLTSS PDFI  
JOB NO. Work Order #0021  
CONTRACT NO. DACW45-90-D-0008

DATE 5-6-92

DAY 

S	M	T	W	TH	F	S
			✓			

WEATHER 

Brgt Sun	Clear	Overcast	Rain	Snow
	✓			

TEMP 

To 12	12-30	30-70	70-85	85-100
		✓		

WIND 

Stl	Moder	Hgh	Recon No.	
	✓			

HUMIDITY 

Dry	Moder	Hgh
	✓	

## SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants

## EQUIPMENT ON SITE:

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled -

1718 Edison - 6 Samples Total Lead

1733 " " - " " "

1729 " " - " " "

1726 " " - " " "

1734 Grand - " " "

1643 Edison - " " "

1638 " " - " " "

1621 " " - " " "

1610 Spruce - " " "

1738 Olive - " " "

1747 Olive - " " "

1751 " " - " " "

1651 " " - " " "

1646 Spruce - 5 Samples Total Lead

All Sampling IAW Spp #1

Decon IAW Spp #6

Documentation IAW Spp #5

Abandon Boring IAW Spp #7

PROJECT NLTSS PDF 1 REPORT NO. \_\_\_\_\_  
JOB NO. Work Order # 0021 DATE 5-6-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified level "D"

Decon & Sampling performed

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Splice 1446 - Unable to take B2  
sub level C backyard  
only had 6" soil.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

Splice, Maple & Edison.

BY Kirill TITLE Staff Scientist

ER 1110-1-263  
1 Oct 90

DATE

DAY

S	M	T	W	TH	F	S
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## A-E DAILY QUALITY CONTROL REPORT

WEATHER

Bryt Sun	Clear	Overcast	Rain	Snow
To 32	32-50	50-70	70-85	85-100
Sea	Moist	High	Report No.	
Dry	Moist	Humid		

TEMP

WIND

HUMIDITY

COE PROJECT MANAGER

Terry Buchholz

PROJECT

NLTSS PDF1

JOB NO.

Work Order #0021

CONTRACT NO.

DACW45-90-D-0008

### SUB-CONTRACTORS ON SITE:

Accusafe, Inc. - Home Inspectors (Certified Lead Paint Inspector and/or Certified Industrial Hygienist)

### EQUIPMENT ON SITE:

Mobile Telephone, Personal Vehicle

### WORK PERFORMED (INCLUDING SAMPLING):

Interior Visual Home Inspections conducted IAW S&P #11  
Home Inspections Survey (HIS)  
Home Inspections Scheduled = 27 HIS Attempted = 28 HIS Completed = 22

Home Inspections Completed at:

<u>1112 REYNOLDS</u>	<u>2218 DELMAR</u>
<u>2103 BENTON</u>	<u>1753 CHESTNUT</u>
<u>2140 ADAMS</u>	<u>2161 LEG</u>
<u>1640 CLEVELAND</u>	<u>1018 IOWA</u>
<u>1751 DRIVE</u>	
<u>2237 EDISON</u>	
<u>1415 MADISON</u>	
<u>1122 IOWA</u>	
<u>1723 CHESTNUT</u>	
<u>2216 STATE</u>	
<u>2151 GRAVE</u>	
<u>1510 23rd ST</u>	
<u>1313 21st ST</u>	
<u>1410 GRAVE</u>	
<u>2636 W 20th ST</u>	
<u>2141A STATE</u>	
<u>2141 STATE</u>	
<u>1926 BENTON</u>	

ER 1110-1-263

1 Oct 90

(Continuation Sheet)

PROJECT NLTSS PDFI

REPORT NO. \_\_\_\_\_

JOB NO. Work Order #0021

DATE 5-6-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

None

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

N/A - Street Clothes

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

None

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

BY Cynthia Paulk TITLE Ass. Proj. Eng.

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
 PROJECT NLTSS PDFI  
 JOB NO. Work Order # 0021  
 CONTRACT NO. BACW45-90-D-0008

DATE 5-7-92

DAY	S	M	T	W	TH	F	S
					✓		

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
		✓			
TEMP	To 22	22-30	30-70	70-45	45-10
			✓		
WIND	Sst	Moder	Hght	Fusion No.	
		✓			
HUMIDITY	Dry	Moder	Humid		
		✓			

## SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants

## EQUIPMENT ON SITE:

HAB K+

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled -

<u>(+3 Dups)</u>	<u>2161a</u>	<u>W. 20th</u>	<u>- 6 Total Samples for Lead</u>
	<u>11649</u>	<u>Maple</u>	<u>- " "</u>
	<u>11637</u>	<u>Maple</u>	<u>- " "</u>
	<u>11627</u>	<u>Maple</u>	<u>- " "</u>
<u>(+3 Dups)</u>	<u>11611</u>	<u>Maple</u>	<u>- " "</u>
	<u>11614</u>	<u>Maple</u>	<u>- " "</u>
<u>(+3 Dups)</u>	<u>22681</u>	<u>Delmer</u>	<u>- 3 Samples Total Lead</u>
<u>(+3 Dups)</u>	<u>2219</u>	<u>Delmer</u>	<u>- 6 Samples Total Lead</u>
	<u>2200</u>	<u>Delmer</u>	<u>- " "</u>
<u>(+3 Dups)</u>	<u>2565</u>	<u>Denver</u>	<u>- " "</u>
	<u>2029</u>	<u>Bryon</u>	<u>- " "</u>
<u>(+3 Dups)</u>	<u>2011</u>	<u>Bryon</u>	<u>- " "</u>

All sampling IAW Sop #1.  
Decon IAW Sop #6.  
Documentation IAW Sop #5.  
Abandon Boring IAW Sop #7.

PROJECT: NL731 PDF1

JOB NO. Work Order # 0021

DATE 5-7-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

~~2610 W. 20th~~ - 3 QA & 3 Dups  
1611 Maple - 3 QA & 3 Dups  
2261 Delmar - 3 QA & 3 Dups  
2219 Delmar - 3 QA & 3 Dups  
2505 Denver - 3 QA & 3 Dups  
2011 Bryon - 3 QA & 3 Dups

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Mod. Field Level "D"

Decon & Sampling Performed

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

DE2255 - Verified in field that there was no such property.  
Could not take samples. Addresses go from DE2253  
DE2257

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

Benton & Stader

BY K. J. [Signature] TITLE Staff Scientist



ER 1110-1-263  
1 OCT 90

DATE 5-11-92

DAY 

S	M	T	W	TH	F	S
	✓					

## A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Buchholz  
PROJECT NLTSS-PDFI  
JOB NO. Work Order #0021  
CONTRACT NO. DACW45-90-D-0008

WEATHER	Bright Sun	Clear	Overcast ✓	Rain	Snow
TEMP	To 32	32-50	50-70 ✓	70-85	85-100
WIND	Still	Light ✓	High	Direction No.	
HUMIDITY	Dry	Moist ✓	Humid		

### SUB-CONTRACTORS ON SITE:

Woodward-Clyde

### EQUIPMENT ON SITE:

HAB Kit

### WORK PERFORMED (INCLUDING SAMPLING):

Sampled -

1932 Benton - 6 Samples Total Lead

2107 " " - " "

2113 " " - " "

2137 " " - " "

2124 " " - 3 Samples Total Lead

2250 " " - 6 Samples Total Lead

2152 State - " "

2137 " " - " "

2040 Benton - " "

2242 State - " "

2216 State - " "

2231 State - " "

1710 " " - 3 Samples Total Lead

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NLTSS PDFI REPORT NO. \_\_\_\_\_  
JOB NO. Work Order #0021 DATE 5-11-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

2124 Benton - Unable to take Ba  
all gravel.  
1716 State - No background

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS.

Grand, State & Iowa

BY R. D. Duda TITLE Staff Scientist

ER 1110-1-263  
1 Oct 90

# A-E DAILY QUALITY CONTROL REPORT

DATE

DAY

S	M	✓	W	Th	F	S
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WEATHER

Brgt Sun	Clear	Overcast	Rain	Snow
✓			✓	
To 32	32-50	50-70	70-85	85-100
✓				
Sk	Moist	High	Report No.	
✓				
Dry	Moist	Humid		
		✓		

TEMP

WIND

HUMIDITY

COE PROJECT MANAGER Terry Buchholz  
PROJECT NLTSS PDFI  
JOB NO. Work Order #0021  
CONTRACT NO. DACW45-90-D-0008

SUB-CONTRACTORS ON SITE:

Woodward - Clyde Consultants

EQUIPMENT ON SITE:

HAB Kit

WORK PERFORMED (INCLUDING SAMPLING):

Sampled -  
(+3 Dup) 1418 Gravel - 6 Samples Total Lead  
1436 " " - " "  
1310 18" St - " "  
2124 Edison - " "  
2154 Edison - " "  
2113 Gravel - " "  
2204 " " - " "  
2216 " " - " "  
2241 " " - " "

All sampling IAW Sec #1

Demon IAW Sec #1

Documentation IAW Sec #5

Abandon Pz IAW Sec #7

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NLTSS PDFI

REPORT NO. \_\_\_\_\_

JOB NO. Work Order #0021

DATE 5-12-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATION(S))

1418 Grand - 3QA & 3 Dip.

2124 Edison - 3QA

2241 Grand - 3QA

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified level "D"

Decor & Sampling Performed

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

None

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS.

Ironing, Edison, Washington, Ohio

BY X-Block TITLE Staff

ER 1110-1-267  
1 Oct 90

## A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Buchholz  
PROJECT NTIS PDFI  
JOB NO. Work Order #0021  
CONTRACT NO. DACW45-90-D-0008

DATE

5-13-92

DAY

S M T W TH F S

WEATHER

Brgs Sun	Clear <input checked="" type="checkbox"/>	Overcast	Rain	Snow
TEMP To 32	32-50	50-70 <input checked="" type="checkbox"/>	70-85	85-100
WIND Still	Moist <input checked="" type="checkbox"/>	High	Report No.	
HUMIDITY Dry	Moist <input checked="" type="checkbox"/>	Humid		

### SUB-CONTRACTORS ON SITE:

Woolward - Clyde Consultants

### EQUIPMENT ON SITE:

HAZ kit

### WORK PERFORMED (INCLUDING SAMPLING):

Sampled -  
Remote Area - Battery Chips - 1622 Delmar - 2 TCLP samples taken  
St. Elizabeth's Hospital 2035 Washington - 3 Samples Total Lead  
" " Madison 2100 Delmar - 9 Samples Total Lead  
" " 2140 Washington - 5 Samples Total Lead  
" " (McKinley School) 2103 Ioway - 6 Samples Total Lead  
Remote Area - Battery Chips - 2108 Calgate - " " " (TCLP samples taken also)  
Triangle Park 2025 Ohio St. - 27 samples total Lead

All sampling added to #1.

Documentation added to #6.

Documentation added to #5.

Documentation added to #7.

03140 Work Order # 0031

DATE 5-13-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Mod-fied level "D"

Decon & Sampling performed

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

2140 Washington - Unable to take 6-12" sample, auger refusal

2035 Washington - Unable to sample front yard because it was too small.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

2200 Edison, 2200 Inver, 2000-2100<sup>off</sup> Washington Blocks. Few houses left - skipping from one house to the next.

BY K. J. DeL. and Staff Scientist

ER 1110-1-263

1 Oct 90

DATE

5-14-90

DAY

S	M	T	W	TH	F	S
				✓		

A-E DAILY QUALITY  
CONTROL REPORT

COE PROJECT MANAGER

Terry Bucholz

PROJECT

NL-TSS PDFT

JOB NO.

Work Order 20001

CONTRACT NO.

DAC L145-90-D-0008

WEATHER

Bright Sun	Clear	Overcast	Rain	Snow
To 32	32-50	50-70	70-85	85 to
Stil	Moder	High	Report No.	
Dry	Moder	Humid		

TEMP

WIND

HUMIDITY

SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants

EQUIPMENT ON SITE:

HAB Kit

WORK PERFORMED (INCLUDING SAMPLING):

Sampled -

(3 QA)

2022 Washington - 6 Samples Total Lead

2207 Fowar - " "

2263 Iowa - " "

2135 Lee - " "

2112 Delmar - " "

(13 QA)

2110 Cleveland - " "

(13 Dup &amp; 3 QA)

2037 Edison - " "

SHEET

1 of 2

FIGURE NO. 2

ER 1110-1-263

1 Oct. 90

(Continuation Sheet)

PROJECT. NLTSS PDFI  
JOB NO. Work Order #0021

REPORT NO. \_\_\_\_\_

DATE 5-14-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

2207 Iowa - 3 QA -

2110 Cleveland - 3 QA

2037 Edison - 3 QA - 300p

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified "D" Level

Decon PPE & Sampling Equipment

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

21166 Washington - Unable to  
sample all gravel

SPECIAL NOTES.

TOMCROW'S EXPECTATIONS:

Edison Delmer, Tony Madson,  
Neidinger.

BY K. J. Jellison

TITLE Staff Scientist



DATE 15 MAY 92

DAY 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER: Terry Buchholz  
PROJECT: NLTSS PDFI  
JOB NO.: Work Order #0021  
CONTRACT NO.: DACW45-90-D-0008

WEATHER	Brief Sun <input checked="" type="checkbox"/>	Clear	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85-100
WIND	0-10	10-20	20-30	30-40	40-50
HUMIDITY	Dry	Moist	Humid	Report No.	

SUB-CONTRACTORS ON SITE: W.C.C. HAB TEAM #2

EQUIPMENT ON SITE: HAB KIT

## WORK PERFORMED (INCLUDING SAMPLING):

SAMPLED	1741	WALNUT	6	TOTAL LEAD
	1747	↓		
	1732	CHESTNUT		
	1413	MADISON	3	" "
	1419	↓	6	" "
	1436	↓		
	1415	IOWA		
SOIL SAMPLED	IAW	SOP #1		
DECON & PPE	IAW	SOP #6		
DOCUMENTATION	IAW	SOP #5		
ABANDON BORINGS	IAW	SOP #7		

~~W.C.C. HAB TEAM #2~~

1110-1-263

1 OCT 90

Continuation Sheet

PROJECT NLTSS PDFI

REPORT NO. \_\_\_\_\_

OS NO. Work Order #0021

DATE 15 MAY 92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES

MODIFIED LEVEL "D" PPE  
DECON & SAMPLING PERFORMED

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

H13 Madison - Did Not Take Boring 2 due to back  
yard was gravel and not contained dogs.

SPECIAL NOTES:

TOMORROW'S EXPECTATIONS

6200 Edison Block

BY Mark Mallone TITLE FIELD TECHNICIAN

# ALL QUALITY CONTROL REPORT

Project Manager Terry Buchholz

Project NTSS PDFI

Job No. Work Order #0021

Contract No. DACW45-98-D-0008

SUB-CONTRACTORS ON SITE

Woodward-Clyde Consultants

EQUIPMENT ON SITE

HAB Kit

WORK PERFORMED INCLUDING SAMPLING

Sampled -

(+3 GAT)

1030 Deliver - 6 Samples Total Leads

2229 Edison - 3 Samples Total Leads

2259 Edison - 6 Samples Total Leads

945 N. Edwards - "

837 N. Edwards - "

2101 Cleveland - "

2245 Deliver - 9 Samples Total Leads

All sampling ITR Sop #1

Decon ITR Sop #10

Documentation ITR Sop #5

Abandon ITR Sop #7

1-2

5-18-92

PROJECT NL 35 1074  
JOB NO Work Order #0021

DATE 5-18-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATION)

2229 Edison - 3 QA samples  
837 Niedringhaus - 3 QA samples  
2101 Cleveland - 3 QA samples  
2265 DeWitt - 3 QA & 3 Dyes

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

1336 19th St: - Unable to  
sample, under construction,  
all gravel.

SPECIAL NOTES.

RECOMMENDATIONS

6 Residential Houses left <sup>to</sup> complete  
all obtained access.  
3 in Eagle Park.

BY K. J. J. J. TITLE Staff Scientist

5-19-92

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Buchholz  
PROJECT MLTSS PDF-I  
JOB NO. Work Order #0021  
CONTRACT NO. DACW45-90-D-0008

WEATHER	Bar	Wind	Temp	Humidity
	✓			
TEMP	To 22	22-50	50-70	70-85
WIND	24	Light	High	Relative
HUMIDITY	Dry	Light	High	

## SUB-CONTRACTORS ON SITE:

Woodward-Clyde

## EQUIPMENT ON SITE:

HAB Kit

## WORK PERFORMED (INCLUDING SAMPLING):

Sampled -

1419 Grand - 6 Samples Total Lead

1005 McComb - " "

(+3 QA & 3 Dups) 1713 Elizabeth - " "

1312 18th St. - 3 Samples Total Lead

(Took TCLP samples at Carver,  
in Eagle Park.)

Eagle Park Acres (+1 TCLP) 108 Carver - 3 Samples Total Lead

Eagle Park Acres 111 Carver - 2 " "

Maximum Depth of ~~12 inches~~ battery chips - 12 inches.

All sampling IAW Sop #1.

Decor. IAW Sop #6.

Documentation IAW Sop #5.

Abandon Boring IAW Sop #7.

7-2

NET 53 1071  
Work Order # 0021

5-19-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATION)

1713 Elizabeth - 3 QA & 3 Dups  
108 Carver - 1 TCLP

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

1203 12th St. - previously sampled.  
2101 Benton - previously sampled.  
1312 18th St. - Unable to take C level of B' due to concrete.  
Only able to obtain level A from B2 due to concrete.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

Eagle Park

BY Kim Leda Staff Scientist

# A-E QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Buchholz  
 PROJECT WLTSS PDFI  
 JOB NO. Work Order #0021  
 CONTRACT NO. DPMW45-90-D-0008

TEMP		WIND		MOISTURE	
TO	FM	DIR	SPD	WET	DRY
12:50	12:50	12:50	12:50	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

20 May 92

X

SUB-CONTRACTORS ON SITE W.C.C. HRS 12PM #2

EQUIPMENT ON SITE HRS KIT

WORK PERFORMED (INCLUDING SAMPLING)

SAMPLED: TOTAL

SAMPLES ROAD

203 TERRY ST

100 HILL ST

SOIL

SAMPLED IAW SOP #1

DECON & PPE IAW SOP #6

DOCUMENTATION IAW SOP #5

RIBBON DOD BOARDS IAW SOP #7

Sands Road: Battery chips from 0 to 12 in.

Eagle Park 203/205 Terry St. → Battery chips from 0 - 12 in.  
 Eagle Park 100/200 Hill St. → Battery chips from 0 -

JOBS NO

Work Order #0021

EQUALITY CONTROL ACTIVITIES (INCLUDING FIELD DATA)

T.L. T.C.L.P. T. Lead CFF  
Q.A. Q.A. Lead Dup.

SAMPLED:

SPRINGS ROAD

203 TERRY ST.

100 HILL ST.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MODIFIED LEVEL "D" PPE  
DECON & SAMPLING PERFORMED

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

BRUSH AT 203 TERRY AND 100 HILL  
SLOWED SAMPLING PROCEDURES.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

LEALIE PARK ACERS  
208 TERRY  
203/205 HARRISON

by Mark Mallone FIELD TECHNICIAN



5-21-92

# CONTROL REPORT

COE PROJECT MANAGER Terry Buchholz  
 PROJECT MLTSS PDF  
 JOB NO. Work Order #0021  
 CONTRACT NO. DRCW45-90-D-0008

TEMP	70-72	72-74	74-76	76-78	78-80
WIND	SE	W	W	W	W
HUMIDITY	87	88	89	90	91

RUN CONTRACTORS ON SITE.

Woodward - Clyde

EQUIPMENT ON SITE.

HAB Kit

WORK PERFORMED (INCLUDING SAMPLING).

Sampled - Eagle Park Acres  
(+ 4 TCLP & 2 QA) 208 Terry - 10 Samples Total  
+ 2 Dips & 2 TCLP & 205 Harrison - 8 " "  
1 QA)

and sampled  
208 Terry - Battery chips found from 0" - 12" deep.  
205 Harrison - Bat Cider and Slag fill material found at 6" to 36".  
No battery chips found. Took samples of fill material and  
one dept foot below fill. Located old slough area

All sampling IAW Sep #1  
Decon IAW Sep #6  
Documentation IAW Sep #5  
Abandonment IAW Sep #7

Work Order # 0001

5-21-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

208 Terry - 4 TCLP & 2 QA  
205 Harrison - 2 D.p.s. & 1 QA

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified level "D".

Decon & Sampling performed.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

208 Terry - Tall grass and weeds made sampling difficult.  
Hard to identify areas with battery chips.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

Eagle Park. GUS #20 Harrison

BY K. K. K. Staff Scientist

THE BARRY JOHNSON  
CONTROL REPORT

COE PROJECT MANAGER Terry Buchholz  
PROJECT NLTSS PDF  
JOB NO. Work Order #0021  
CONTRACT NO. DACW45-90-D-0008

TEMP		WIND		HUMIDITY	
10:22	22.00	54	W	07	W
11:22	22.00	54	W	07	W
12:22	22.00	54	W	07	W
13:22	22.00	54	W	07	W
14:22	22.00	54	W	07	W
15:22	22.00	54	W	07	W
16:22	22.00	54	W	07	W
17:22	22.00	54	W	07	W
18:22	22.00	54	W	07	W
19:22	22.00	54	W	07	W
20:22	22.00	54	W	07	W
21:22	22.00	54	W	07	W
22:22	22.00	54	W	07	W
23:22	22.00	54	W	07	W
24:22	22.00	54	W	07	W

5-22-92

SUB-CONTRACTORS ON SITE

Woodward-Clay

EQUIPMENT ON SITE

HAS Kit

WORK PERFORMED (INCLUDING SAMPLING)

Sampled - Eagle Park

(Including 100p) (+3 test) 203 Samples Total Lead

All samples IATU Sop #1  
IATU Sop #10  
IATU Sop #15  
IATU Sop #17  
Abandoned boring IATU Sop #17

203 Harrison - Old Slough Area.  
Found & sampled fill material (cinders & slag) from  
6" to 30". No battery chips found within  
fill material.

K. C. Blenda  
Staff Scientist

Foggy Rock

TOMORROW'S EXPECTATIONS

SPECIAL NOTES

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN

Decon & Sampling Performed

Modified level "D"

HEALTH AND SAFETY LEVELS AND ACTIVITIES

203 Terry - 1 Dip & 3 TLLP

QUALITY CONTROL ACTIVITIES INCLUDING FIELD CALIBRATION

Work Order 0001  
5-22-92

5/27/92

X

COE PROJECT MANAGER Terry Buchholz  
 PROJECT NLTSS PDFI  
 JOB NO. Work Order #0021  
 CONTRACT NO. DACW45-90-D-0008

TEMP	70-82	22-30	X	70-82	22-30
WIND	X	WIND	WIND	WIND	WIND
HUMIDITY	0%	X	WIND	WIND	WIND

SUB-CONTRACTORS ON SITE

WCC Hab Team #2  
Zembrano Consultants - Surveyors

EQUIPMENT ON SITE

Hab Kit

WORK PERFORMED (INCLUDING SAMPLING):

Eagle Park

Took 5 TCLP Samples at 202A Harrison + 1 TCLD duplicate  
+ 12 Total Lead Samples + 1 Lead dup. + 2 LQ + 1 TQ

Took 3 TCLP Samples + 9 Total Lead Samples at  
Roosevelt + 128 + 1 LQ

Residential Soil Sampling

Took 6 Total Lead Samples @ 1423 Madison + 3 lead dup + 3 LQ  
1013 Grand + 3 lead dup + 3 LQ  
1017 Grand  
1213 Iowa  
1231 Iowa

+ 15 Total Lead Samples + 3 Lead dup + 3 LQ  
Samples at ~~Memorial~~ Memorial Park.

Soil Sampling AW SOP 1  
Documentation AW SOP 5  
Decon AW SOP 6  
Boring Abandonment AW SOP 7

Surveying - Survey all borings for remote areas and Eagle Park Acres  
1 2

DATE: 11/13/11  
PROJECT: HNTSI RDTI  
WORK ORDER # 0001

Took 3 QA Samples @ 202 Harrison  
1423 Madison & 1013 Grand

Took 3 duplicate Samples @ 1423 Madison & 1013  
Iowa & Memorial Park

HEALTH AND SAFETY LEVELS AND ACTIVITIES

Modified Level D PPE

Decon & Sampling performed

} HAB Team

Survey Team - Level D PPE

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

None

SPECIAL NOTES. Surveyors will return to tie in elevations for benchmarks  
for 3108 Calgate property and 2230 Cleveland.

TOMORROW'S EXPECTATIONS

Demobilize. Stop all field work until further access

No further access for residential properties.

BY E. A. Pyt Geologist

DATE 5/28/92  
DAY 

S	M	T	W	Th	F	S
				X		

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Buchholz  
PROJECT MLTSS PDFI  
JOB NO. Work Order #0021  
CONTRACT NO. DACW45-90-D-0008

TEMP	To 22	22-30	30-70	70-85	85-100
WIND	SE	Wester	High	Report No.	
HUMIDITY	Dry	Wester	Humid		

## SUB-CONTRACTORS ON SITE:

Zimbrance Consultants

## EQUIPMENT ON SITE:

Surveying Equipment

## WORK PERFORMED (INCLUDING SAMPLING):

Surveying of Remote Area on Sands Road (Farmers Field)

Tied in 3 borings to closest benchmarks

ER 1110-1-263

1 Oct 90

(Continuation Sheet)

PROJECT NLTSS PDFI

REPORT NO. \_\_\_\_\_

JOB NO Work Order #0021

DATE 5/22/92

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

~~Multi-Step~~  
Level "D" PPE

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Finish w/ surveying for properties which have been sampled.

BY Cynthia Powell TITLE Asst. Proj Engineer



# A-E DAILY QUALITY CONTROL REPORT

6/8/92

X

COE PROJECT MANAGER Terry Buchholz  
 PROJECT MLTSS PDFI  
 JOB NO. Work Order #0021  
 CONTRACT NO. DACW45-90-D-0008

WEATHER	Clear	Cloudy	Partly Cloudy	Foggy	Snow
TEMP	To 32	32-50	50-70	70-85	85-100
WIND	Still	Light	High	Report No.	
HUMIDITY	Dry	Moist	Humid		

## SUB-CONTRACTORS ON SITE:

Layne-Western & Woodward-Clyde Consultants

## EQUIPMENT ON SITE:

CME-75 Drilling Rig, 6" I.D. HSA,  
split-spoon and other sampling equipment.  
PPE equipment.

## WORK PERFORMED (INCLUDING SAMPLING):

Monitoring Well 109-92 Drill and Install  
Drill total depth 12 ft. Did not reach total depth.  
Ran out of time.

Took Total Lead Samples at  
0-1 ft  
5-6 ft  
10-11 ft.

Prior to drilling, steam cleaned drill rig, HSA and  
other drilling equipment.

Had site Safety Briefing.

8:30am Had Joint Meeting of Utility Companies to clear drilling  
locations for wells

PROJECT: HLTSS PDFI  
JOB NO: Work Order # 0021

DATE: 6/8/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level "D"

Decon Sampling Equip. and PPE

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Decon water from drill rig tank had iron stains in it.  
Corrective Action - Went back to field office to obtain clean rinse-  
top water for deconing sampling equipment.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS.

Finish drilling and install casing for MW-109-92

BY: Cynthia Puelke TITLE: Asst. Proj. Engineer

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Buchholz  
 PROJECT NLTSS PDF#  
 JOB NO. Work Order #0021  
 CONTRACT NO. DACW45-90-D-0008

DATE 6/9/92

DAY X

WEATHER	Clear	Partly	Overcast	Rain	Snow
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEMP	To 32	32-50	50-70	70-85	85-100
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
WIND	Still	Light	High	Report No.	
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
HUMIDITY	Dry	Moist	Humid		
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

## SUB-CONTRACTORS ON SITE:

WCC & Layne-Western

## EQUIPMENT ON SITE:

CME-75 Drilling Rig and Equipment, 6 1/4" ID, HSA  
Stainless Steel Split-Spoon Sampler.  
Decon & PPE equipment.

## WORK PERFORMED (INCLUDING SAMPLING):

Drill MW-109-92 from 10.5 ft to T.D. 70 ft.

Set 2" stainless steel ID - 58 ft.

Set 2 in ID. stainless 0.01 slotted screen - 10 ft long at 68 ft.

Took total lead samples at 15 ft - 16 ft w/ stainless splt. spoon  
20 ft - 21 ft " sampler.  
25 ft - 26 ft. " "

Took split-samples spoon samples for lithology at every 10 ft  
until top of screen at 60 ft. Took split-spoon samples at  
60 ft, 65 ft, and 70 ft.

Collected 2 sample over screen interval (65 ft - 67 ft) for sieve  
analysis.

Below groundwater level (19.5 ft), sand would heave back in hole.  
Could not reach At bottom of well

At 30 ft total depth, sand heaved 7 ft into augers. Stuck center  
plug bit into augers. Remove HSA and hex rods from hole. Clean out  
sand and unstick center bit. Went back in hole w/ HSA. Drill to T.D.  
w/out center plug bit. Had 18 in to 2 ft sand heave in hole at 70 ft.

6/9/92

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Buchholz  
PROJECT NLTSS PDFI  
JOB NO. Work Order #0021  
CONTRACT NO. DACW45-90-D-0008

DATE	6/9/92						
DAY	S	M	T	W	TH	F	S
WEATHER	Brgz Sun	Clear	Overcast	Rain	Snow		
TEMP	To 32	32-50	50-70	70-85	85-100		
WIND	Stl	Moder	Hgt	Report No.			
HUMIDITY	Dry	Moder	Humid				

SUB-CONTRACTORS ON SITE:

EQUIPMENT ON SITE:

WORK PERFORMED (INCLUDING SAMPLING):

Added water tap water during drilling of 30ft to 70ft.  
Used 500 gals. tap water.

Discussed w/ Joe Kussane decided to make 68 ft T.D. Set screen and riser. Set 1 centralizer at 57-58 ft. Set 1 cent. at 27 ft-28 ft

Using 1 in tremie pipe, tremied 250 lbs 20/40 Ottawa Colorado Sand  
Top of filter pack 52-53 ft.

Drop slowly ~~one~~ 5 gallons of 3/4" dry bentonite pellets.  
let bentonite hydrolyze over night.

During placement of filter pack and bent. pellets bumped up HSA  
6 in at a time.

PROJECT NLTSS PDFI REPORT NO. \_\_\_\_\_  
JOB NO. Work Order #0021 DATE 6/9/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level "D"

Decom Sampling Equip & PPE

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Hard unconsolidated sands heave into inside of 6 1/4" ID. HSA.  
Add tap water to keep the pressure head on inside HSA during drilling.

SPECIAL NOTES.

Joe KISSANE - USACE Geologist Present on Site.

TOMORROW'S EXPECTATIONS:

BY Cynthia Parille TITLE Asst. Project Engineer  
3 of 3

SUB-CONTRACTOR ON SITE

W. L. W. 1964 Nov 1964 W. L. W. Western Drilling Co. Inc.

EQUIPMENT ON SITE 15 1/2" Drill Bit 15 1/2" Drill Bit 15 1/2" Drill Bit

WORK BE REQUIRED TO BE DONE TO SITE

Drill 15 1/2" Drill Bit 15 1/2" Drill Bit 15 1/2" Drill Bit

Drill 15 1/2" Drill Bit 15 1/2" Drill Bit 15 1/2" Drill Bit

Drill 15 1/2" Drill Bit 15 1/2" Drill Bit 15 1/2" Drill Bit

Drill 15 1/2" Drill Bit 15 1/2" Drill Bit 15 1/2" Drill Bit

Drill 15 1/2" Drill Bit 15 1/2" Drill Bit 15 1/2" Drill Bit

Skid-down for the day

PROJECT

NLTS3 - PDP1

REPORT NO.

OS NO.

Order 10021

DATE

6/10/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD OBSERVATIONS)

HEALTH AND SAFETY LEVELS (UNION CODE)

Medical Doctor

Barling

Chiropractor

Steam and Gas Turbines

Decks and PPE

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN

Risk taken on 5/12 to pull well line drill and install well.

SPECIAL NOTES

TCMORROW'S EXPECTATIONS

Install casing, filter pack, and cement MW-10992

Move to MW-10812

BY Cynthia Pavella

TITLE Asst. Proj. Engineer

**ONE**

DAV

## WEATHER

COE PROJECT MANAGER

# PROJECT

**JOB NO**

**CONTRACT NO.**

Brn	Clear	Over	Rain	Snow
Sun	X	X		
6:32	7:30	5:10	10:35	6:50
Sun	X	Mon	Report No.	
Mon	X	Tues		
Mon	X	Wed		

**SUB-CONTRACTORS ON SITE:**

Woodward-Clyde Consultants + Layne-Western

## EQUIPMENT ON SITE

CM E-75 Drilling Rig, 6 1/2" HSA

WIPPE + Decon Lowp

**WORK PERFORMED (INCLUDING SAMPLING):**

Install and Drill MW-109-92

Re-drill 60" from 60ft - 70ft

Had 8' in. of sand heave in hole.

Set 2" ID. stainless steel casing 69 ft. - 10 ft. Section

Set 2" - 10ft. stainless steel screen frame 59 - 69ft 0.01 in slotted wire mesh

Tremie piped 20/40 Ottawa Colomda Sand from 56ft - 69ft. Used  $\approx$  350 lbs sand

Pumped 10 gals bentonite slurry as bentonite seal w/ using line tremie pipe.

With tremie pipe cemented well w/ cement grout mix

10 Grout mix 5 gal water / 94 lbs cement + 6 lbs bentonite

Pumped  $\approx$  300 gals grout mix. Used 63 bags <sup>(47 lbs/bag)</sup> cement,  $\approx$  130 <sup>130</sup> lbs bentonite.



HR 1110-1-263

1 Oct 90

PROJECT NLTSS PDFI REPORT NO. 6/11/92  
LOG NO. Work Order #0021 DATE

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES

Modified Level "D"

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Well took a lot of cement from bot at water level (19ft) to 30ft. Pumped more cement to bring cement up to surface.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Decon Augers. Startin Drill and take samples from MW-108-92

BY Cynthia Paulsen TITLE Assist. Proj. Engineer.

DAY S M T W T F S

X

# A-E DAILY QUALITY CONTROL REPORT

WEATHER

COE PROJECT NUMBER Terry Buchholz

PROJECT NTSS PDF1

FOR Blackwater 50021

CONTRACT NO. DAGW15-91-000000

DATE	TIME	WIND	TEMP	REL. HUM.	PRECIP.	MOON	PHASE	NO.
10/12/92	10:30	0-10	50	70	0.0	0.0	0.0	0.0
10/13/92	10:30	0-10	50	70	0.0	0.0	0.0	0.0

## SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants & Leape-Western

EQUIPMENT ON SITE: CME-75 Drilling Rig 6" HSA 2" stainless steel

split-spoon samplers

## WORK PERFORMED (INCLUDING SAMPLING):

Decom Angers and Set-up Rig on MW10893

Drilled w/ HSA to 25 ft.

At 18 ft. interval took total lead samples of 6 stainless steel split spoon sampler at every 5 ft interval

## Sample ID #

SMW10893206ACL 0-1 ft

SMW10893206HLL 5-6 ft

SMW10893206ULL 10-11 ft

SMW10893206VLL 115-16 ft

SMW10893206WLL 20-21 ft

SMW10893206XLL 25-26 ft

At water level at 18 ft. With split-spoon sample at 20-21 ft had oil sheen in water in sample. When drilling w/ HSA's had oil sheen in soil cuttings. Took 25-27 ft split-spoon sample.

Stopped drilling for the day. Try to contact USACE-Omaha. Contacted Joe Kusene-St. Louis. Wait until Monday until decision advise with well.

(SAMPLE FORMAT)

ER 1110-1-263

1 Oct 90

DATE

DAY

S	M	T	W	Th	F	S
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## A-E DAILY QUALITY CONTROL REPORT

WEATHER

Brght Sun	Clear	Overcast	Rain	Snow
To 32	32-50	50-70	70-85	85-100
Stl	Modst	Hght	Report No.	
Dry	Modst	2 Humid		

TEMP

WIND

HUMIDITY

COE PROJECT MANAGER

PROJECT

JOB NO

CONTRACT NO

Terry Buchholz

NLTSS-PDF1

W-002

DPR W-95-290-00008

SUB-CONTRACTORS ON SITE:

EQUIPMENT ON SITE:

WORK PERFORMED (INCLUDING SAMPLING):

Contacted ESE. On soil sample at 20-21 ft will have them conduct a Modified EPA 8015 which identifies type of hydrocarbons. Also will conduct BTEX and TPH-Infrared.

Installed flush-mount protective pad around MW-109-92

SHEET 2 OF 3

FIGURE NO 2

ER 1110-1-263  
1 Oct 90

(P.S. - Last copy)  
Remade copy.

6/16/92  
C. Pavella

(Continuation Sheet)

PROJECT. NLTSS PDFI  
JOB NO. Work Order #0021

REPORT NO. \_\_\_\_\_  
DATE 6/12/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level "D"

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Found hydrocarbon contamination in soil samples at water level  
~ 18 in ft - 22 ft. Stop drilling for the day.  
Contact USACE, St. Louis (WCC) & Health & Safety Officer,  
IEPA.  
Wait until further notice from USACE.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

BY C. Pavella TITLE Asst. Proj. Engineer

# AIE DAILY REPORT CONTROL REPORT

PROJECT MANAGER Terry Buchholz  
 PROJECT ALTSS PDFI  
 WORK ORDER # 0021  
 CONTRACT NO. DACW45-90-D-0008

SUB-CONTRACTORS ON SITE:

Woodward - Clark

EQUIPMENT ON SITE:

✓ ME-TS Drill Rig  
 Split Stem Sampler  
 6" 1/4" LSA, Stainless Steel 2"

WORK PERFORMED (INCLUDING SAMPLING):

Finish drilling Well MW119-12  
 Install filter pack around screen and grout up

Technical sample was taken in the second  
 interval 70-72' but will not be analyzed

Used 49 bags (47 lbs ea) for grouting  
 1 1/2 bags  
 210 gals of water for finish drilling and install  
 filter pack

195 gals used for breakback slurry grouting

TIME	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME	DATE
07:00		07:00		07:00		07:00		07:00	
08:00		08:00		08:00		08:00		08:00	
09:00		09:00		09:00		09:00		09:00	
10:00		10:00		10:00		10:00		10:00	
11:00		11:00		11:00		11:00		11:00	
12:00		12:00		12:00		12:00		12:00	
13:00		13:00		13:00		13:00		13:00	
14:00		14:00		14:00		14:00		14:00	
15:00		15:00		15:00		15:00		15:00	
16:00		16:00		16:00		16:00		16:00	
17:00		17:00		17:00		17:00		17:00	
18:00		18:00		18:00		18:00		18:00	
19:00		19:00		19:00		19:00		19:00	
20:00		20:00		20:00		20:00		20:00	
21:00		21:00		21:00		21:00		21:00	
22:00		22:00		22:00		22:00		22:00	
23:00		23:00		23:00		23:00		23:00	
24:00		24:00		24:00		24:00		24:00	

WELLS PCE  
Work Order # 6021

QUALITY CONTROL ACTIVITIES INCLUDING FIELD CALIBRATION

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level D PPE

Down PPE & Sampling gear 100% S/P #6

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

None

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS.

Install P2 on MW4-42, Begin Well development  
ch. 51

BY E. A. Ray TITLE Engineer, SI

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Buchholz  
PROJECT MLTSS PDFI  
JOB NO. Work Order #0021  
CONTRACT NO. DACW45-90-D-0008

WEATHER	DATE	TIME	LOCATION	UNIT
TEMP	To 22	11:50	50-70	70-85
WIND	24	WIND	WIND	WIND
HUMIDITY	Dry	WIND	WIND	WIND

## SUB-CONTRACTORS ON SITE:

Woodward Clyde Consultants

## EQUIPMENT ON SITE:

CME 75 Drill Rig, 6 1/4" HSA  
Stainless Steel 2" Split Spoon Sampler, HNU

## WORK PERFORMED (INCLUDING SAMPLING):

Install pad & flush mount cover on MW111-9Z  
Moved & labelled drums to Tarapore pits

Began drilling MW104-9Z Drilled to 65'  
Took total field analytical samples from 0-25' @ 5'  
intervals. 1 sample @ 65-67' in screened interval.  
Water level @ 19'

Sample IDs  
SMW10492 OAL  
SMW10492 OHL  
SMW10492 OUL  
SMW10492 OXL  
SMW10492 OVL  
SMW10492 OVL

W-10021  
Ward's 00021

QUALITY CONTROL ACTIVITIES INCLUDING FIELD CALIBRATIONS

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level D PPE

Decon Sampling equipment (AW) SUP #6

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Sheared Kelly extension at 60' Unable to drill past 65' w/out extension will get new extension 6/19

SPECIAL NOTES

TCMORROWS EXPECTATIONS

Finish MW 104-42. Set Screen & r ser. Add filter pack and gravel

BY E. A. 104 TITLE Geologist



# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Buchholz  
PROJECT NLTSS PDFI  
JOB NO. Work Order #0021  
CONTRACT NO. DACW45-90-D-0008

WEATHER	Bright Sun	Clear X	Overcast	Fog	Cloud
TEMP	To 22	22-50	50-70	70-85	85-90
WIND	Still	Moder	High X	Report No.	
HUMIDITY	Dry	Moder	Humid X		

SUB-CONTRACTORS ON SITE:

Woodward-Clyde, Louns - Western Drilling

EQUIPMENT ON SITE. CME-75 Drilling Rig, 6" HSA, 2" stainless steel split-spore sampler, PPE Equip. & Decom.

WORK PERFORMED (INCLUDING SAMPLING):

Try to retake split-year sample from 70-72 ft.  
Recovery low = 24 in.

ME-111-92

دستخط/مهر

- 92 stainless  
Install 2" x 10 ft slotted wall screen (0.01 in slot size) at - ft.  
Install 6 - 2" x 10 ft stainless steel riser pipe from 0 to ft.

Set Filter pack from 56.5 ft to 70 ft (T.D.) w/ 1 in PVC Teevie Pipe  
Filter pack material = 20/40 Colorado Ottawa Sand. Used  $\approx$  300 lbs.

w/ 1" tremie pipe pump bentonite slurry ( $\approx 15$  gals.) for bentonite plug.

W/ 1' frame and pump current great mixture, to surface.

Used a 250 g/lr water 7 bags (4711/lb) cement & 30 lbs broken (included in treatment)

Consent of the President of the United States is hereby given.

MLTSS PLFI  
Work Order #0021

DATE

6/11/11

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level "D" PPE

Decon Equip and PPE IAW PDFI SOP #6

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

None

SPECIAL NOTES..

TOMORROW'S EXPECTATIONS

Place Surface Cap on MD-28 11/12/11

MD-28 11/12/11

BY A. Fawcett TITLE Asst. Proj. Engineer

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Buchholz  
 PROJECT MLTSS PDFI  
 JOB NO. Work Order #0021  
 CONTRACT NO. DACW45-90-D-0008

WEATHER	Temp	Wind	Humidity	Clouds
TEMP	To 32 32-50 50-70 70-85 85-100	WIND	24 40-60 60-80 80-100	MOON
HUMIDITY	Dry Moist X			

## SUB-CONTRACTORS ON SITE:

Wendland - Clyde Conn. Leysie-Western Drilling

EQUIPMENT ON SITE. CME-75 Drilling Rig. 6" HSA, stainless steel  
2 in split-spacer sampler, HNA monitoring equip.

## WORK PERFORMED (INCLUDING SAMPLING):

Plug & Abandon MW-108-92  
With 1" tremie pipe, cement grout bailing to surface.  
Used 24 bags (47 lbs/bag) cement; 50 lbs bentonite,  $\approx$  240 gals water.  
For MW-108 D  
Took observing <sup>water</sup> samples at MW-108 D & MW-104. A possible  
floating substance in bailer. No apparent oil sheen etc in  
water sample. Possible oil or grease stain of designated bailer  
rope in well.  
MW-104 appeared to have no floating product or oil contamination.  
MW-108 S was dry. No sample taken.

Drill MW-111-92 (1628 Delmar) to 70 ft.

Took Total Lead Analytical Samples from 0-25 ft at 5 ft intervals  
Took observing geologic samples every 5 ft to T.D.  
Took 2 samples over screened interval - (60-62 ft & 65-67 ft).  
Mixed samples - same lithology.

~~Top of water~~ Top of groundwater = 24 ft.

Analytical Samples ID # SMW1119204 ACL 0-1 ft

" SMW11192049 HL 5-6 ft

SMW111920410 L 10-11 ft

SMW111920412 L 15-16 ft

SMW111920414 L 20-21 ft

SMW111920416 L 25-26 ft. SHEET 1 of 2

NLTS PCTI  
Work Order #0001

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

PPE: Modified "D" Level

Decom Sampling Equipment and PPE IAW SOP #6

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

None

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

Install well screen, riser in MW11-92  
Set 5' filter pack and cement grout.

BY

C. J. [Signature]

TITLE

Asst. Project Mgr.

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Buchholz  
 PROJECT NLTSS PDFI  
 JOB NO. Work Order #0021  
 CONTRACT NO. DACW45-90-D-0008

WEATHER	Bar	Cloud	Overcast	Wind	Temp
Sun					
TEMP	To 32	32-50	50-70	70-85	85-100
WIND	Still	Light	Mod	High	Report No
HUMIDITY	Dry	Mod	Humid		

## SUB-CONTRACTORS ON SITE:

Workhard - Close Consultants

## EQUIPMENT ON SITE:

Stainless steel bailer, Dredge & Sampling Equipment; HNU

## WORK PERFORMED (INCLUDING SAMPLING):

Sampling Groundwater in MW-108-92 Boring

Take 2 in stainless bailer and sample top 2 ft of groundwater inside of 6"4" HSA.

Fill 2 - 1 Liter Amber Glass Jar  
Fill 4 - 40 mL vials w/ preservative

Visible hydrocarbon sheen in samples.

11-15-92 PDRI  
Work Order # 0021

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATION)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Multi-Use Level "D" PPE

Decon PPE & Sample Equip IAW PDRI SOP # 6

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

None

SPECIAL NOTES.

HNu Readings below background.

TOMORROW'S EXPECTATIONS

Plug MW-108-92

Drill MW-111-92

BY C. Tavel

TITLE Asst. Project Manager



10-1-14-15  
1 OCT 90

Continuation Sheet

PROJECT

JOB NO

Work Order # 0021

DATE

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

1201 Worthington - 3 RA = 3 Dips

HEALTH AND SAFETY LEVELS AND ACTIVITIES

Modified level "D"

Decon of samples, contained

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

1201 Worthington - 1433  
Eagle Park

BY

TITLE

(Print Name)



DATE 6-22-92

DAY 

S	<u>X</u>	T	W	TH	F	S
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# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT NU/TARACORP  
JOB NO. 89MC114V W.O. #0021  
CONTRACT NO. DACW45-90-D-0008

WEATHER	<input checked="" type="checkbox"/> Breezy <input checked="" type="checkbox"/> Sunny	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Overcast	<input type="checkbox"/> Rain	<input type="checkbox"/> Snow
TEMP	To 32	32-50	<u>50-70</u>	70-85	85-100
WIND	<input checked="" type="checkbox"/> SW	Moder	High	Report No.	
HUMIDITY	<input checked="" type="checkbox"/> Dry	Moder	Humid		

## SUB-CONTRACTORS ON SITE:

Layne-Western  
(2" Submersible Pump; electric generator)

## EQUIPMENT ON SITE:

750cc  
CME-65(-) ATV Drill rig

## WORK PERFORMED (INCLUDING SAMPLING):

Well Development - MW-111-92  
- removed ± 600 gallons of water.  
INSTALL FLUSH MOUNT Well protector on well  
MW-104-92

USACE Personnel (Nevin + Cathy ?) on site  
from 1:30 - 2:15 PM

PROJECT NL/TARACORP PDFI  
JOB NO. WO-0021

REPORT NO. \_\_\_\_\_  
DATE 6-22-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Calibrated Horiba U-10 Water Quality Meter

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level "D"  
Decon in accordance with CDAP SOP'S

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

Well Development as follows:  
Pump 200 gallons, surge Pump 200 gallons, surge, pump 200 gals.

TOMORROW'S EXPECTATIONS:

Complete Development of MW-111-92

Begin development of MW-109-92

BY David L. Pate TITLE Project Geologist

DATE 6-23-92

DAY 

S	M	T	W	TH	F	S
		X				

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ/General  
PROJECT NUTARACORP  
JOB NO. 89MC114V W.O. #0021  
CONTRACT NO. DACW45-90-D-0008

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
	X	X			
TEMP	To 32	32-50	50-70	70-85	85 up
				X	
WIND	Still	Moder	High	Report No.	
	X				
HUMIDITY	Dry	Moder	Humid		
		X			

SUB-CONTRACTORS ON SITE: Layne Western

EQUIPMENT ON SITE. 750 CME-65(?) ATV  
2" submersible Pump + Generator

WORK PERFORMED (INCLUDING SAMPLING):

Complete development of MW-111-92  
7:30 AM - 1:45 PM

Start Development of MW-109-92  
2:00 PM -

PROJECT NLTSS  
WQ. 0021

REPORT NO. \_\_\_\_\_  
DATE 6-23-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Calibrate Horiba water quality meter  
" PH meter

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level "D"

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Additional development required on  
MW-111 due to excessive silt.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

complete—Development of MW-109-92

BY

D. Fato

TITLE

Proj. Geologist

DATE 6-24-92

DAY 

S	M	T	W	TH	F	S
			X			

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER TERRY BUCHHOLZ  
PROJECT NUTARACORP  
JOB NO. 89MC114V W.O. #0021  
CONTRACT NO. DACW45-90-D-0008

WEATHER	Bright Sun X	Clear X	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85+
WIND	Still	Light X	High	Report No.	
HUMIDITY	Dry	Moist	Humid X		

## SUB-CONTRACTORS ON SITE:

Layne Western

## EQUIPMENT ON SITE:

Drill rig - CME-750 ATV  
Submersible Pump, Generator

## WORK PERFORMED (INCLUDING SAMPLING):

Developing MW - 109-92

PROJECT NLTSS  
JOB NO. WC-0021

REPORT NO. \_\_\_\_\_  
DATE 6-24-92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Calibrate Horiba U-10 Water Quality Meter  
Calibrate Orion pH meter

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level "D"  
H+S and Decon in accordance with CDAP  
Procedures

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Complete Development of MW-109  
Develop MW-108-92  
109-92

BY D. Pato TITLE Proj Geologist

DATE 6/25/92  
DAY 

S	M	T	W	Th	F	S
				X		

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Buchholz/Gene Lui  
PROJECT NLTSS PDF1  
JOB NO. Work Order #0021  
CONTRACT NO. DACW45-90-D-0008

WEATHER	Bright Sun <input checked="" type="checkbox"/>	Clear <input checked="" type="checkbox"/>	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85-100
WIND	Still	Moderate <input checked="" type="checkbox"/>	High	Report No.	
HUMIDITY	Dry	Moderate <input checked="" type="checkbox"/>	Humid		

SUB-CONTRACTORS ON SITE: Woodward-Clyde Consultants  
Layne-Western

EQUIPMENT ON SITE. ATV CME-750, Stainless Steel Bailer, Surge Block,  
Submersible Pump, generator

## WORK PERFORMED (INCLUDING SAMPLING):

Development of MW-109-92 Continued.

Bailed 5 more well volumes ( $\approx 40$  gals) & Water Quality did not clear up.

Notified Mike Klosterman (USACE geologist) of problems.

As per discussion considered well developed.

Total amount of water bailed and pumped from MW-109-92 = 2350 gals.

PROJECT. NLTSS PDFI  
JOB NO. Work Order #0021

REPORT NO. \_\_\_\_\_  
DATE 6/25/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Calibrate Horiba Turbidity/Conductivity Meter.

Calibrate Orion pH meter.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level "D"

Decon & sampling equipment and PPE TAW SOP #6

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

Joe Kissane visited on site during problems of development.

TOMORROW'S EXPECTATIONS:

Develop MW-104-92

BY Cynthia Paulka TITLE Asst. Proj. Engineer



DATE 6/26/92  
DAY 

S	M	T	W	Th	<u>F</u>	S
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# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Terry Buchholz/Gex Lui  
PROJECT NLTSS PDFI  
JOB NO. Work Order #0021  
CONTRACT NO. DACW45-90-D-0008

WEATHER	Brgt Sun	Clear	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85-100
WIND	Stl	Modr	Hght	Report No.	
HUMIDITY	Dry	Modr	Humd		

## SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants  
Layne-Western

## EQUIPMENT ON SITE:

CME-750ATV Rig, Stainless Steel Bailer, Surge Block,  
Submersible Pump, generator

## WORK PERFORMED (INCLUDING SAMPLING):

Developed MW-104-92

Recovered via pumping 720 gallons of drilling fluid.

Pumped and surged well IAW PDFI SOP #2.  
a total of

Pumped 1210 gals total of water for 4 hrs 20 min to

clean fines from water. Stopped pumping when water quality  
parameters stabilized.

Bailed 10 well volumes ( $\approx 80$  gals). Water quality  
beginning to clear. ~~At~~ Turbidity  $\approx 180$  Nuss.

Will call Mike Klosterman for further instruction  
on Monday.

PROJECT. NLTSS PDFI REPORT NO. 26  
JOB NO. Work Order #0021 DATE 6/28/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Calibrate Horiba Turbidity/Conductivity Meter

Calibrate pH meter.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level "D"

Decon sampling equipment and PPE TAW SOP<sup>26</sup>

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

None.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Complete Development of MW-104-92

Drill w/ rig 2-3 borings at Remote Fill Area - Missouri Ave.

BY Cynthia Pavelka TITLE Assit. Proj. Engineer

# A-E DAILY QUALITY CONTROL REPORT

DATE 6/29/92

DAY 

S	M	T	W	Th	F	S
	X					

WEATHER 

Bryt Sun	Clear	Overcast	Part	Snow

TEMP 

70-82	70-80	50-70	40-60	30-50
		X		

WIND 

Sil	Moist	High	Room No.	
	X			

HUMIDITY 

Dry	Moist	Humid		
	X			

COE PROJECT MANAGER: Gene Lui  
PROJECT MLTSS PDFI  
JOB NO. Work Order #0021  
CONTRACT NO. DACW45-90-D-0008

## SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants  
Layne-Western Co.

EQUIPMENT ON SITE. CME-750 ATV Rig, 4 1/4 HSA  
stainless steel bailer & split-spoon sampler.

## WORK PERFORMED (INCLUDING SAMPLING):

Finish developing MW-104-92

Bailed additional 5 well volumes.  
Conductivity, pH, and temp. & turbidity stabilized

Turbidity  $\approx$  24 Ntuc - last 2 readings samples

With 2" x 24" stainless split-spoon sampler take  
TCLP-Pb samples in 3 borings for Remote Fill Area at off  
located at Missouri Ave.

Bottom of fill material in each boring was  
approximately 2 ft deep. ~~Dr~~

Release Rig. All <sup>drilling</sup> Rig work completed for PDFI.  
PA

ER 1110-1-263  
1 Oct 90

PROJECT NLTSS PDFI

REPORT NO. 6/29/92 (Continuation Sheet)

JOB NO. Work Order #0021

DATE \_\_\_\_\_

QUALITY CONTROL ACTIVITIES INCLUDING FIELD CALIBRATIONS:

Calibrate Turbidity, pH, & conductivity meter.

HEALTH AND SAFETY LEVELS AND ACTIVITIES:

Modified Level "D"

Steam clean rig IAW SOP #6

Decan & sampling equipment & PPE IAW SOP #6

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

None

SPECIAL NOTES:

TOMORROW'S EXPECTATIONS:

None -

BY

Cynthia Pavella

TITLE

Asst. Proj. Engineer

DATE

S	U	Y	X	TH	F	S
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# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER \_\_\_\_\_  
PROJECT MLTSS PDFI  
JOB NO. Work Order #0021  
CONTRACT NO. DACW45-90-D-0008

Bright Sun	Clear	Overcast X	Rain	Snow
12-12	12-50	50-70	70-85 X	85-100
Sat	Moist X	High	Report No.	
Dry	Moist	Humid X		

To 12	12-50	50-70	70-85	85-100
-------	-------	-------	-------	--------

Soil	Moist	High	Report No.
------	-------	------	------------

Dry	Moist	Humid X
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**SUB-CONTRACTORS ON SITE:**

Woodward Clyde Consultants

**EQUIPMENT ON SITE.**

## Hermit Data Logger

**WORK PERFORMED (INCLUDING SAMPLING):**

Aquifer testing at wells MW 103-91  
MW 104-92  
MW 109-92  
MW 111-92

Slug Testing 1Aw SOP 4  
Decon 1Aw SOP 6  
Documentation 1Aw SOP 5

PROJECT. NLTSS PDFI  
JOB NO. Work Order #0021

REPORT NO. \_\_\_\_\_  
DATE 7/22/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Decon performed Level D PPE

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

BY E. S. Page TITLE Geologist

DATE 7/13/92  
DAY 

S	M	T	W	Th	F	S
	X					

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Gene Liu  
PROJECT MLTSS PDFI  
JOB NO. Work Order #0021  
CONTRACT NO. DACW45-90-D-0008

WEATHER	Bryt Sun	Clear	Overcast	Rain	Snow
		X			
TEMP	To 32	32-50	50-70	70-85	85 up
					X
WIND	Still	Moder	High	Report No.:	
		X			
HUMIDITY	Dry	Moder	Humid		
			X		

## SUB-CONTRACTORS ON SITE:

Woodward-Clyde Cons.

## EQUIPMENT ON SITE:

Stainless Steel 2" boiler, Submersible Pump, and Sampling Equipment

## WORK PERFORMED (INCLUDING SAMPLING):

Sample Groundwater Wells

MW-106D

MW-107D

MW-111-92

MW-101

MW-112 QC Field Blank

MW-113 QC Field Blank

Sampled wells IAW SOP #3

PROJECT NLTSS PDFI  
JOB NO Work Order #0021

REPORT NO. \_\_\_\_\_  
DATE 7/13/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

QC - MW 111-92 Duplicate  
MW 112-92 CFF Field Blank + Trip Blank

QA - MW 107-D  
MW 113 Field Blank + Trip Blank

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level "D"

Decon Sampling Equip + PPE IAW SOP #6

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Could not sample wells  
MW-106S Well was dry  
MW-105S Well was dry  
MW-105D Well casing and riser is bent. Can not get  
hailer down the well.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Sample Wells - MW-107S  
MW-104  
MW-104-92  
MW-109-92

BY Cynthia Paulsen

TITLE Asst. Project Eng.



DATE 7/14/92

DAY 

S	M	<input checked="" type="checkbox"/>	W	Th	F	S
---	---	-------------------------------------	---	----	---	---

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Gene Liu  
PROJECT MLTSS PDFI  
JOB NO. Work Order #0021  
CONTRACT NO. DACW45-90-D-0008

WEATHER	Bright Sun	Clear <input checked="" type="checkbox"/>	Overcast <input checked="" type="checkbox"/>	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85-100
WIND	St <input checked="" type="checkbox"/>	Light	High	Report No.	
HUMIDITY	Dry	Light	High <input checked="" type="checkbox"/>		

## SUB-CONTRACTORS ON SITE:

Woodward - Clyde Consultants

EQUIPMENT ON SITE. 2" + 3/4" stainless steel bailer, submersible pump  
& sampling equipment.

## WORK PERFORMED (INCLUDING SAMPLING):

Groundwater Sampling  
Purge & Sample Wells

MW - 1075

MW - 104

MW - 104-92

MW - 109-92

Sampled wells IAW SOP #3

PROJECT NLTSS PDFI  
JOB NO. Work Order #0021

REPORT NO. \_\_\_\_\_  
DATE 7/14/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Collected Samples for wells

MW-104-92

Matrix Spike / Matrix Spike Duplicate

MW-109-92

QA

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level "D"

Decon Sampling Equip & PPE. IAW SOP #6

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

MW-1075 - Due to tight riser pipe use  $\frac{3}{4}$ " stainless bailer to purge & sample.

MW-109 - Fished tubing that was from past sampling events from well. Removed tubing.

MW-102 Unable to sample. Well was dry.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

MW-109

MW-110

MW-108D

MW-103-91

BY Cynthia Parrella TITLE Assist. Proj. Engineer

DATE 7/15/92  
DAY 

S	M	T	W	Th	F	S
			X			

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Gene Liu  
PROJECT NLTSS PDFI  
JOB NO. Work Order #0021  
CONTRACT NO. DACW45-90-D-0008

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
			X		
TEMP	Te 32	32-50	50-70	70-85	85-100
				X	
WIND	Still	Modest	High	Report No.	
HUMIDITY	Dry	Modest	Humid		

## SUB-CONTRACTORS ON SITE:

Woodward-Clyde Consultants

## EQUIPMENT ON SITE:

2" stainless steel bailer & submersible pump and sampling equipment.

## WORK PERFORMED (INCLUDING SAMPLING):

Finish Groundwater Sampling

Purge & Sample Wells IAW SOP #3.

Sample:

MW-108D

MW-109

MW-103-91

MW-110

PROJECT: NLTSS PDFI  
JOB NO. Work Order #0021

REPORT NO. \_\_\_\_\_  
DATE 7/8/15/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Field Blank = WMW114-10GG00W  
Trip Blank = WMW114-10GG0TB

MW-108 Field Duplicate  
MW-103-91 MS/MSD

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Modified Level "D"  
Decon Sampling Equip & PPE IAW SOP#6

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

MW-1085 - Well was dry, Unable to sample.  
MW-103 Well Riser is bent over at surface.  
Unable to sample.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

Completed all Groundwater Sampling.

BY Cynthia Pauline TITLE Asst. Proj. Engineer

# A-E DAILY QUALITY CONTROL REPORT

DATE 8/12/92

DAY 

S	M	T	W	TH	F	S
			X			

WEATHER	Broke Sun	Clear	Overcast	Rain	Snow
		Y			
TEMP	To 32	32-50	50-70	70-85	85-100
				X	
WIND	SE	MOOR	HGT	Report No.:	
		X			
HUMIDITY	Dry	MOOR	HUMID		
		X			

COE PROJECT MANAGER Gene Liu  
PROJECT NLTSS PDFI  
JOB NO. Work Order #0021  
CONTRACT NO. DACW45-90-D-0008

## SUB-CONTRACTORS ON SITE:

WOODWARD-CLYDE CONSULTANT

## EQUIPMENT ON SITE:

HAB KIT

## WORK PERFORMED (INCLUDING SAMPLING):

SAMPLED 1933 GRAND - 3 TOTAL LEAD SAMPLES  
1924 GRAND - 6 TOTAL LEAD SAMPLES  
1340 MADISON - 2 TOTAL LEAD SAMPLES  
1348 MADISON - 3 " " "  
922 GRAND 3 " " "  
1712 DELMAR 6 " " "  
2033 DELMAR 6 " " "  
2240 STATE 6 " " "  
2238 STATE 6 " " "  
2208 BENTON 6 " " "

WBT-9

SAMPLED 5012 IAW SUP #1

DECON EQUIPMENT IAW SUP #6

ABANDONED PDSBGS IAW SUP #7

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NLTSS PDFI

REPORT NO. \_\_\_\_\_

JOB NO. Work Order #0021

DATE 8/12/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

1933 GRANT - SAMPLED 3 TOTAL LEAD QUANTITIES

- SAMPLED 3 TOTAL LEAD QUANTITIES ~~TO BE~~ CFP

Assurance

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MODIFIED LEVEL "D"

PERSONNEL AND EQUIPMENT DECON IAW SOP #6

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

TRIED TO SAMPLE 1928 STATE

1335 IDIA

AND 1316 MADISON - ALL GRUEL PARKING LOTS

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

2028 BANTON, 2027 BRYAN, & 2317 CLEVELAND, DUMP

DIRTY RINSE WATER AT TRACORP AVE & RETURN KEY TO WAT

BERNE AT AMSR

BY Randy Robert TITLE ASSISTANT ENG

CFP

# A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER Gene Liu  
PROJECT MLTSS PDFI  
JOB NO. Work Order #0021  
CONTRACT NO. DACW45-90-D-0008

DATE 8/13/92

DAY 

S	M	T	W	TH	F	S
---	---	---	---	----	---	---

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
			X		
TEMP	To 32	32-50	50-70	70-85	85 to
			X		
WIND	Still	Light	High	Report No.	
		X			
HUMIDITY	Dry	Moist	Humid		
		X			

## SUB-CONTRACTORS ON SITE:

WOODWARD - CLYDE CONSULTANTS

## EQUIPMENT ON SITE:

HAB KIT

## WORK PERFORMED (INCLUDING SAMPLING):

SAMPLED 2028 BENTON - 6 TOTAL LEAD SAMPLES

2027 BRYAN - 3 TOTAL LEAD SAMPLES

2317 CLEVELAND - 6 TOTAL LEAD SAMPLES

SOIL SAMPLING TAW SDP#1

DECON EQUIPMENT TAW SDP#6

ABANDONED CORDONS TAW SDP#7

ER 1110-1-263  
1 Oct 90

(Continuation Sheet)

PROJECT NLTSS PDFI  
JOB NO. Work Order #0021

REPORT NO. \_\_\_\_\_

DATE 8/13/92

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

2027 Bryan <sup>4132</sup> 13.7V.412 -- 5.4mm.3.77 3 7.77V.412 Quality Assurance CFP

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

PROTECTION LEVEL "0"  
PERSONNEL AND EQUIPMENT DECON INO SOP#6

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

2027 BRYAN HAD A FULLY SHADEN FRONT YARD  
NOTED RE GRASS - SAMPLED ONLY IN BACK YARD

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS:

BY Nancy R. Kahl TITLE Staff Engineer  
CFP



ORTEK  
QUALITY ASSURANCE  
PROGRAM MANUAL

Revision 0  
Date November 15, 1991  
Controlled Copy # 22

Prepared by:

Marcia A. Kuehl

Marcia A. Kuehl  
QA Officer

Approved by:

David J. DeCarlo

David J. DeCarlo  
Wet Chemistry Manager

Nils K. Melberg

Nils K. Melberg  
Metals Manager

Dave L. Schumacher

Dave L. Schumacher  
Organics Manager

Glen A. Moses

Glen A. Moses  
Director of Marketing

James S. Chang, Ph.D.

James S. Chang, Ph.D.  
Laboratory Director

David A. Powless

David A. Powless  
President

Title ORTEK QUALITY ASSURANCE PROGRAM MANUAL. Revision # 0

Date November 1991 Section # 0 Page 2 of 15

---

REVISION \_\_\_\_\_

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I have read, understand and will comply with the requirements defined in this Quality Assurance Program Manual.

Signature \_\_\_\_\_ Initials \_\_\_\_\_

Printed Name \_\_\_\_\_ Printed Initials \_\_\_\_\_

Date \_\_\_\_\_

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Doxlator, Mary Jo	
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			2.2	<u>Material Procurement and Control</u>	1	0
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			3.1	President	1	0
			3.2	Laboratory Director	1	0
			3.3	Assistant Laboratory Director	2	0
			3.4	Director of Marketing	2	0
			3.5	Laboratory QA Officer	3	0
			3.6	Section Managers	3	0
			3.7	Analysts	4	0
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NEESA HAZWRAP IQAP Element #	COE CDAP Topic #	EPA QAPjP Element #	QAPM Section #	TABLE OF CONTENTS  SECTION TITLE	PAGE #	REVISION #
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			6.1.1	Sample Receiving Procedures	1	0
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			8.1	<u>Detection Limits</u>	1	0
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NEESA HAZWRAP IQAP Element #	COE CDAP Topic #	EPA QAPJP Element #	QAPM Section #	TABLE OF CONTENTS  SECTION TITLE	PAGE #	REVISION #
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NEESA HAZWRAP IQAP Element #	COE CDAP Topic #	EPA QAPjP Element #	QAPM Section #	TABLE OF CONTENTS SECTION TITLE	PAGE #	REVISION #
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NEESA HAZWRAP LQAP Element #	COE CDAP Topic #	EPA QAPjP Element #	QAPM Section #	TABLE OF CONTENTS  SECTION TITLE	PAGE #	REVISION #
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-	9	-	17.0	<u>REFERENCES</u>	1	0

NOTES: NEESA: Naval Energy & Environmental Support Activity  
HAZWRAP: U.S. Department of Energy Hazardous Waste Remedial  
Actions Program  
COE: U.S. Army Corps of Engineers  
LQAP: Laboratory Quality Assurance Plan  
  
CDAP: Chemical Data Acquisition Plan  
  
QAPjP: Quality Assurance Project Plan  
QAPM: Quality Assurance Program Manual

(

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## 1.0 INTRODUCTION

Quality assurance (QA) is a planned system of activities that will provide a quality product. ORTEK's product is environmental data. The purpose of this QA manual is to provide each ORTEK employee with the requirements necessary to produce defensible environmental data of known quality.

The precision, accuracy, completeness, representativeness and comparability of environmental data produced for our clients, must be consistently evaluated and documented in accordance with this manual. Personnel responsible for implementation, documentation and inspection of QA activities are defined by providing accountability for quality from sample receipt through data reporting and sample disposal.

This QA manual is written in accordance with the following established guidelines as they apply to analytical laboratory measurements:

"Guidelines and Specifications for Preparing Quality Assurance Program Plans", EPA QAMS-004/80, EPA-600/8-83-024.

"Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans", EPA QAMS-005/80, EPA-600/4-83-004.

"Guidelines for the Preparation of Standard Operating Procedures (SOPs) for Field and Laboratory Measurements," US EPA Region V, March 16, 1989.

"Final Standard Quality Assurance Project Plan Content Document," US EPA Region V, June 1989.

"Chemical Data Quality Management for Hazardous Waste Remedial Activities," Department of the Army, US Army Corps of Engineers, ER-1110-1-263, 1 October 1990.

"Content Requirements for Quality Assurance Project Plan," US EPA Region V, January 1989.

"Requirements for Quality Control of Analytical Data," DOE/HWP-65/R1, July 1990.

"Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program," NEESA 20.2-047B, June 1988.



This QA manual addresses the 16 essential elements of an EPA Quality Assurance Project Plan (QAPP), the 19 elements of a DOE, NEESA, and HAZWRAP Laboratory Quality Assurance Plan (LQAP) and the 9 topics of a COE Chemical Data Acquisition Plan (CDAP). The title page and table of contents were not considered separately numbered sections. As this ORTEK QA Manual is not intended to be project specific, the "project" is considered to be the laboratory. Accordingly, the project description and project organization and responsibility elements describe ORTEK's operations and QA structure only.

This document is considered a "manual" as it is intended to be easily handled and referred to often. It is written for use and not disuse by ORTEK staff. The usual and worst fate of QA documents is to lie on a bookshelf collecting dust and to be trotted out during audits or to impress clients. This manual is not intended to impress, but to express the quality control requirements of the laboratory clearly and succinctly for all to follow.

## 2.0 LABORATORY FACILITIES AND OPERATIONS

ORTEK has laboratory facilities separated into two buildings, located at 2496 West Mason Street (Building 1) and 1609 Western Avenue (Building 2), in Green Bay, Wisconsin. The facility floor plans are depicted in Figure 0. The facilities are less than a mile apart and are divided into two major functional areas: Building 1; Sample receipt, preparation and inorganic analysis. Building 2; Organic's instrumentation and administration. This arrangement has reduced contamination of samples by laboratory solvents and provided adequate space for growth, storage, and training programs. Approximately 16,000 square feet is devoted to laboratory and administrative operations, and another 2,000 square feet is utilized for training programs. The training laboratory includes a classroom and instrumentation laboratory.

### 2.1 Equipment

Major instrumentation available for analytical operations is listed in Table 1. Operation of this equipment is documented in an SOP dependent on the method of analysis. Support documentation for the equipment listed includes the manufacturers operation manuals and bound logbooks that record service and maintenance. Calibration results specific to the analyses are included in each client project file for GC, HPLC and GC/MS analyses.

Lachat Autoanalyzer, FTIR, AA and ICAP calibration results specific to the analyses are cross referenced by date to the samples, and are contained with raw data in batch run number logs kept in chronological order by each section supervisor. Section 7.0 details the instrument specific calibration requirements.

### 2.2 Material Procurement and Control

#### 2.2.1 Purchasing

The quality of materials ordered are defined by the reference analytical method included in the Standard Operating Procedure, and verified by the QC Officer. A purchase order (PO) should specify the quality needed, and once received the PO should be used to cross check that the materials received are of the appropriate quality. All materials should be dated upon receipt and again upon opening. An inventory card system tracks the specific materials ordered.

FIGURE 1  
BUILDING 1

ORTEK (Western)  
ORGANIC LAB/OFFICES  
FACILITY LAYOUT

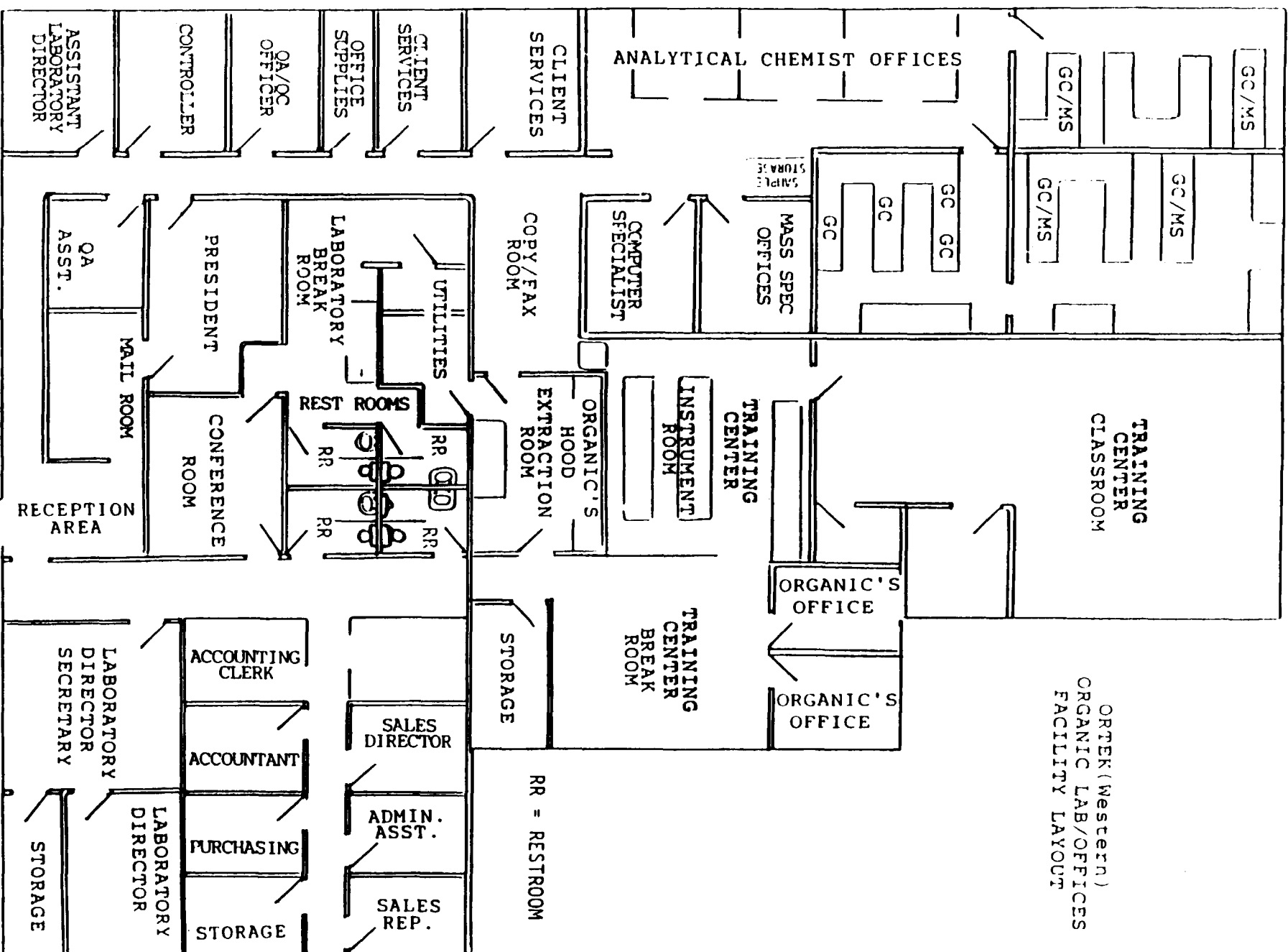
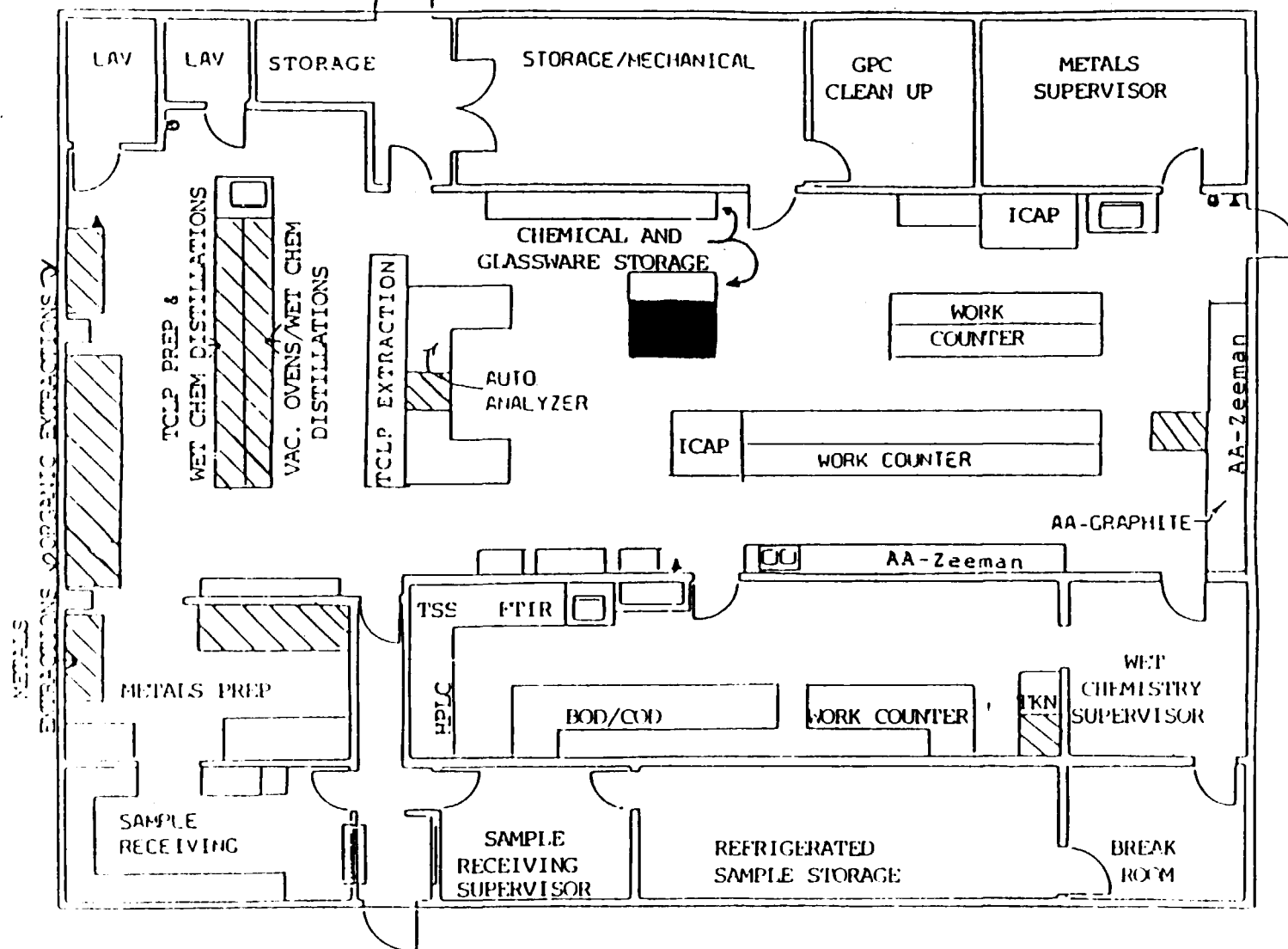


FIGURE 1  
BUILDING 2

CRTER (W. Mason)  
INORGANIC/RECEIVING LABS  
FACILITY LAYOUT



SECRET

EYE WASH  
FIRE EXTINGUISHER  
VENTED COUNTER (HOOD)

### 2.2.2 QC Lot Checks

The quality of preservatives, acids and solvents used by ORTEK are documented in accordance with SOP OP-20 in order to provide assurance that analytical results reported are not biased. A preservative/reagent or solvent QC checklist (Figure 1) is to be completed for each lot received. Set aside lots need to be documented only once upon receipt of the first shipment. All subsequent lots should be verified by checking that the lot number matches the original vendor lot that was QC tested. The QC lot number assigned should be used in all subsequent documentation such as extraction logbooks and runlogs.

### 2.2.3 Analytical Standards

The identity and purity of the neat standard must be documented by the vendor and supplied with the standards. All weights must be traceable to NIST. This documentation must be attached to the Standards Logbook, or kept in a Standards Binder for each section of the laboratory.

Expiration dates must be written on each analytical standard prepared by ORTEK or purchased commercially. Metals working standards are less than 24 hours old at the beginning of the run, so expiration dates are not required. In addition, a preparation or opening date must be recorded on the container. All bench records containing or referencing calibration results must reference the standards used in the file or runlog name by the Standards Logbook number and page where the documentation is recorded. Instrument log books for metals will reference the standard number used.

When analytical standards are discarded, the entry in the Standards Logbook must be crossed out with an X and the analyst discarding the standard initial, date, and note how the standard was disposed of.

Only Class A volumetric glassware cleaned in accordance with SOP OP-8 is to be used to prepare standards. The analytical balance used to weigh standards must be calibrated and leveled before use in accordance with SOP OP-5. Testing of pipettes will be done in accordance with SOP OP-7.

FIGURE 1

# PRESERVATIVE/REAGENT OR SOLVENT QC CHECK LIST

PRESERVATIVE	REAGENT OR SOLVENT
HOW PREPARED: _____	HOW PREPARED: _____
DATE PREPARED: _____	DATE PREPARED: _____
VENDOR: _____	VENDOR: _____
VENDOR LOT #: _____	VENDOR LOT #: _____
DATE LOT RECEIVED: _____	DATE LOT RECEIVED: _____
USES: _____	USES: _____
QC LOT # ASSIGNED: _____	QC LOT # ASSIGNED: _____

ANALYSIS	DATE ANALYZED: _____
LAB SAMPLE ID: _____ BATCH #: _____	
HOW PREPARED FOR ANALYSIS: _____	
_____	
METHOD OF ANALYSIS: _____	

RESULTS	SUMMARY OF DETECTS:
_____	
_____	
_____	
APPROVED BY: _____ DATE: _____	

ORIGINAL TO: QC OFFICER  
COPIES TO:

METALS

SAMPLE RECEIVING

ORGANICS

WET CHEM

Data quality can be adversely affected by the storage of lab reagents and standards in inappropriate containers. No organic reagents or standards should be stored in or prepared with any plasticware, to avoid phthalate contamination or analyte sorption. Metal standards must be stored in high density polyethylene (HDPE) containers to reduce the probability of metals plating out on the container. Amber containers must be used for photosensitive reagents.

#### 2.2.4 Material Storage and Disposal

Manufacturer's recommendations regarding storage and disposal must be followed. Standards and reagents are stored separately from samples. Incompatible reagents such as organic acids and flammable liquids are stored separately from oxidizing acids. Organic reagents are stored at or below 4°C. Stock standards in organic solvents are stored in freezers.

Refrigerator and freezer temperatures are monitored by an electronic system integrated with the building security alarms. Daily recording and verification of temperatures is to be done in accordance with SOP OP-6. Thermometers are calibrated annually in accordance with SOP OP-4.

Expired reagents and standards are segregated and contents/concentrations are compared against the City of Green Bay Metropolitan sewage discharge limits or TCLP limits for assessment of disposal options.

Reagents/standards that cannot be disposed of in the sewer system or a municipal landfill are logged into the Hazardous Waste Inventory Log for eventual lab packing and disposal. SOP OP-14 details these laboratory waste disposal practices.

### 2.3 Sample Management

Clients are encouraged to use sample containers and documentation supplied by ORTEK to aid in collecting a representative sample that is properly preserved and analyzed to meet their data needs. Although this manual defines the lab QA Program, field QA operations also impact sample integrity. Field QA is discussed below to alert ORTEK personnel to concerns and requirements for proper sample packaging, shipment, and collection.

### 2.3.1 Sample Containers/Preservatives

ORTEK uses commercially available precleaned sample bottles. No sample bottles are reused. Two different levels of bottle quality are kept in inventory. One level consists of bottles of which a certain percentage are checked for purity in each lot. A certificate of purity is included with the bottles.

The other level of bottle quality available is the same as the precleaned and tested bottles, but without certificates of analysis. ORTEK also purchases presterilized bottles for drinking water coliform analyses. Any uncleaned bottles received will be randomly checked for cleanliness.

Preservatives are prepared by ORTEK and their quality documented on the Preservative/Reagent or Solvent QC Checklist (Figure 1). Preservatives may be added to the sample container or contained separately in sealed ampules, depending on client need.

The client's request for bottles and shipping supplies is documented on a Sample Bottle Request Form (Figure 2). The lot number of trip blanks, bottles, and preservatives is recorded in order to trace back possible sources of contaminated field/trip blanks. SOP OP-3 details the procedure for tracking sample bottles and preservatives sent to clients.

Sample containers, preservatives, and minimum volumes needed by ORTEK are listed in Table 2. EPA holding times are also listed to enable clients to efficiently time sampling and to permit lab managers to schedule analyses.



FIGURE 2

## SAMPLE COLLECTION & SHIPMENT REGULATIONS

Most analytical programs require  
samples to be received  
**CHILLED**  
-but not frozen

Samples should therefore be **PACKED WITH ICE**  
to keep the temperature at **NO MORE THAN 4 DEGREES C.**  
Sample containers should be placed in plastic bags to  
prevent sample labels from soaking off.

("blue ice" can be used, but ice  
typically provides better cooling.)

\*\*\* DATA FOR SAMPLES RECEIVED AT GREATER THAN 4 DEGREES C  
MAY BE REJECTED BY THE  
WISCONSIN DNR  
OR  
OTHER REGULATORY AGENCIES!

Oregon's "Temperature San" is a vial of water which  
will be used to check cooler temperature on receipt.  
The measured temperature is recorded on the Chain of Custody.

## SAMPLE BOTTLE REQUEST FORM

Will Pick Up ☐ Yes ☐ No

Date: \_\_\_\_\_

Time: \_\_\_\_\_ ☐ A.M. ☐ P.M.

Job No.: \_\_\_\_\_

Date: \_\_\_\_\_

Send Shipment to:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Plastic	Total Number	Unpress	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	Other
1000 ml	_____	_____	_____	_____	_____
500 ml	_____	_____	_____	_____	_____
250 ml	_____	_____	_____	_____	_____

Glass (Clear)

1000 ml	_____	_____	_____	_____	_____
500 ml	_____	_____	_____	_____	_____

Glass (Amber)

1000 ml	_____	_____	_____	_____	_____
500 ml	_____	_____	_____	_____	_____

Vials

120 60 ml	_____	_____	_____	_____	_____
40 ml	_____	_____	_____	_____	_____

Lead Kit Only ☐

Sterile (6 oz.) ☐

Cooler(s) Needed ☐ Yes ☐ No

Amount: \_\_\_\_\_

Bottles Labeled ☐ Yes ☐ No

Special Instructions:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Requested by: \_\_\_\_\_

Order Filled by: \_\_\_\_\_

TABLE 1

## ORTEK INSTRUMENTATION

<u>ORGANIC SECTION</u>				
Instrument ID	Date of Purchase	Manufacturer	Model Number	Accessories
GC/MS HP-1	1990	Hewlett-Packard	5970B	7673 Autosampler RTE-A Data System
GC/MS HP-2	1991	Hewlett-Packard	5995C	TEKMAR 2000/2016 Purge and Trap Autosampler
GC/MS HP-3	1991	Hewlett-Packard	5970B	7673 Autosampler RTE-A Data System
GC/MS HP-4	1991	Hewlett-Packard	5995C	TEKMAR 2000/2016 Purge and Trap Autosampler
GC/MS 50BB	1989	Finnigan Incos	50B	CTC A2000 S Autosampler Formaster Soft- ware for CLP
GC/MS 50CV	1989	Finnigan Incos	50C	TEKMAR LCS 2000/2016 Purge and Trap Autosampler Formaster Soft- ware for CLP

TABLE 1

## ORTEK INSTRUMENTATION

ORGANIC SECTION (Continued)				
Instrument ID	Date of Purchase	Manufacturer	Model Number	Accessories
GC C	1990	Varian	3400	Photoionization Detector, Flame Ionization Detector, TEKMAR 2000 Purge and Trap, TEKMAR 2050 Autosampler
GC I	1990	Varian	3400	Photoionization Detector, Flame Ionization Detector, Varian 8035 Autosampler
GC E	1990	Varian	3400	Photoionization Detector, Flame Ionization Detector, HP 19395A Head-space Unit
GC F	1990	Varian	3400	Flame Ionization Detector, HP 19395A Headspace Unit

TABLE 1

## ORTEK INSTRUMENTATION

ORGANIC SECTION (Continued)				
Instrument ID	Date of Purchase	Manufacturer	Model Number	Accessories
GC B	1990	Varian	3400	Hall Electrolytic Conductivity Detector, Photo-Ionization Detector, TEKMAR 2000 Purge and Trap, TEKMAR 2016 Autosampler
GC D	1991	Hewlett-Packard	5890	Hall Electrolytic Conductivity Detector, Photo-Ionization Detector, TEKMAR 2000/2016 Purge and Trap Auto-sampler
GC A	1991	Hewlett-Packard	5890	Hall Electrolytic Conductivity Detector, Photo-Ionization Detector, OI 4460A/MPM16
GC K	1988	Perkin-Elmer	8700	Hall Electrolytic Conductivity Detector, Photo-Ionization Detector, TEKMAR 2016 Purge and Trap

**TABLE 1**  
**ORTEK INSTRUMENTATION**

<b>ORGANIC SECTION (Continued)</b>				
<b>Instrument ID</b>	<b>Date of Purchase</b>	<b>Manufacturer</b>	<b>Model Number</b>	<b>Accessories</b>
GC            G	1988	Perkin-Elmer	8420	Flame Ionization Detector, HP 19395A Head-space AS8300 Autosampler
GC            J	1988	Perkin-Elmer	8420	Electron Capture Detector, AS8300 Autosampler
GC            H	1990	Hewlett-Packard	5890B	Oval ECD Detectors, 7673 Autosamples
GC	1987	Perkin-Elmer	8500	Flame Ionization Detector, Electron Capture Detector, AS8300 Autosampler
Gel Permeation Chromatograph	1991	Analytical Bio-Chemistry Labs	1002B	Automatic Shutoff Valve, Sample Fraction Collector

TABLE 1  
ORTEK INSTRUMENTATION

<u>ORGANIC SECTION</u> (Continued)				
Instrument ID	Date of Purchase	Manufacturer	Model Number	Accessories
Sonicator	1988	Heat Systems	W-385	
Sonicator	1991	Heat Systems	XL-2020	Electronic Tuning
Sample Evaporator Bath	1991	Zymark Turbovap		6 Unit
HPLC	1988	Waters Associates		712 WISP Auto-sampler, 590 Programmable Pump, 480 UV Detector

**TABLE 1**  
**ORTEK INSTRUMENTATION**

<b>METALS SECTION</b>				
<b>Instrument ID</b>	<b>Date of Purchase</b>	<b>Manufacturer</b>	<b>Model Number</b>	<b>Accessories</b>
Inductively Coupled Argon Plasma Spectrometer (ICAP) 61E	1991	Thermo Jarrell Ash	61E	Simultaneous ICP Autosampler
ICAP P2	1988	Perkin-Elmer	Plasma	Perkin-Elmer AS80 Autosampler
Atomic Absorption Spectrometer (AA) 5100Z	1991	Perkin-Elmer	5100	Zeeman Background Correction, Graphite Furnace Perkin-Elmer AS60 Autosampler
AA Spectrometer 5100Z2	1991	Perkin-Elmer	5100	Zeeman Background Correction, Graphite Furnace Perkin-Elmer AS60 Autosampler
AA Spectrometer 3030B	1985	Perkin-Elmer	3030B	Graphite Furnace Cold Vapor Analysis, Perkin-Elmer AS60 Autosampler
AA Spectrometer 1100B	1987	Perkin-Elmer	1100B	Flame

TABLE 1  
ORTEK INSTRUMENTATION

WET CHEM SECTION				
Instrument ID	Date of Purchase	Manufacturer	Model Number	Accessories
Autoanalyzer	1988	Lachat Quick Chem	II	Lachat Model 1100 Autosampler, Model 80 Circulating Water Bath
Fourier Transformation Infrared Spectrometer (FTIR)	1989	Perkin-Elmer	1600	
Sonicator	1989	TEKMAR	TM600-2	



**TABLE 2**  
**ORTEK SAMPLE CONTAINERS/PRESERVATIVES & HOLDING TIMES**  
**ORGANICS**

PARAMETER	MATRIX Analytical Procedure	HOLDING TIME from sample collection date	CONTAINER	PRESERVATIVE	MINIMUM SAMPLE VOLUME
VOLATILE HALOCARBONS & AROMATICS  (GC-Methods)	WATER	14 days	3-40 ml VOA Vials	4°C, no headspace, 40 ml HCl to pH<2	
	SOIL/WASTE -Direct Purge -Methanol Extraction	14 days 14 days to extract 7 days to analysis	2-120 ml glass jars/teflon lids no headspace	4°C	10 gm
VOLATILES GC/MS methods	WATER	14 days	3-40 ml VOA vials	4°C, no headspace, HCl to pH<2	40 ml
	SOIL/WASTE -Direct Purge -Methanol Extraction	14 days 14 days to extract 7 days to analysis	1-120 ml glass jars/teflon lids, no headspace	4°C	10 gm
ORGANOCHLORIDE PESTICIDES/ PCBs HERBICIDES	WATER	7 days to extract 40 days to analysis	2-liter amber glass jar/teflon lid	4°C	1000 ml
	SOIL/WASTE	14 days to extract 40 days to analysis	1-8 oz amber glass jar with teflon lid	4°C	120 gm
SEMIVOLATILES (GC or GC/MS method)	WATER	7 days to extract 40 days to analysis	1-liter amber glass jars/teflon lid	4°C	1000 ml
	SOIL/WASTE	14 days to extract 40 days to analysis	1-8 oz glass jar with teflon lid	4°C	50 gm

TABLE 2  
ORGANICS (Continued)

PARAMETER	MATRIX	HOLDING TIME from sample collection date	CONTAINER	PRESERVATIVE	MINIMUM SAMPLE VOLUME
TOTAL PETROLEUM HYDROCARBONS (GC - Modified California method)	WATER	14 days	1-liter amber glass jar	4°C, no headspace	40 ml
	SOIL/WASTE -Direct Purge -Methanol Extraction	14 days 14 days to extract 14 days to analysis	1-120 ml glass jars/teflon lids	4°C	120 gm
TOTAL RECOVERABLE PETROLEUM HYDROCARBONS-IR	WATER	28 days recommended	1-liter glass jar with teflon lid	H <sub>2</sub> SO <sub>4</sub> to pH<2, 4°C	1000 ml
	SOIL/WASTE	28 days recommended	1-8 oz glass jar with teflon lid	4°C	20 gm
TCLP ORGANICS	SOIL/WASTE	14 days to extract 7 days to solvent extraction 40 days to analysis	1-80 oz amber glass wide mouth jar with teflon lid	4°C recommended	100 g

## NOTES:

Triple volume is required for organic matrix spikes and matrix spike duplicate samples for water samples.

**TABLE 2**  
**METALS**

PARAMETER	MATRIX	HOLDING TIME from sample collection date	CONTAINER	PRESERVATIVE	MINIMUM SAMPLE VOLUME
METALS: TCLP, ICP and/or GFAA	WATER	6 months	1-liter HDPE bottle	HNO <sub>3</sub> to pH<2	500 ml
	SOIL/WASTE	6 months 14 days to extract TCLP 6 months after extraction	8 oz glass jar	4°C	20 gm
MERCURY*	WATER	28 days	1-liter HDPE bottle	HNO <sub>3</sub> to pH<2	1000 ml
	SOIL/WASTE	28 days	8 oz glass jar	4°C	20 gm
CHROMIUM VI	WATER	24 hours	1-liter HDPE bottle	4°C	500 ml
	SOIL/WASTE	Not established, 24 hr recommended once soil is extracted	8 oz glass jar	4°C	20 gm

NOTES: HDPE = High Density polyethylene

\*Can be from same container as METALS

TABLE 2  
WET CHEMISTRY

PARAMETER	MATRIX	HOLDING TIME from sample collection date	CONTAINER	PRESERVATIVE	MINIMUM SAMPLE VOLUME
ACIDITY	WATER	14 days	1-liter HDPE	4°C	100 ml
ALKALINITY	WATER	14 days	1-500 ml HDPE	4°C	100 ml
B.O.D.	WATER	48 hours	1-500 ml HDPE	4°C	500 ml
C.O.D.	WATER	28 days	1-500 ml HDPE	H <sub>2</sub> SO <sub>4</sub> to pH<2	100 ml
CHLORIDE	WATER	28 days	1-500 ml HDPE	4°C	100 ml
CHLORINE, RESIDUAL	WATER	24 hours	1-500 ml HDPE	4°C	100 ml
COLIFORM, SAFE/UNSAFE	WATER	24 hours 30 hours max.	1-200 ml sterilized HDPE	Na <sub>2</sub> SO <sub>3</sub> , Sterile	100 ml
COLIFORM, FECAL/TOTAL	WATER	24 hours 30 hours max.	1-200 ml sterilized HDPE	Na <sub>2</sub> SO <sub>3</sub> , Sterile	100 ml
CYANIDES	WATER	14 days	1-liter HDPE	NaOH to pH>12, 4°C	1000 ml
	SOIL	14 days	1-8 oz glass jar	4°C	50 g
FLASH POINT	WATER	28 days	1-500 ml HDPE	4°C	100 ml
	SOIL	28 days	1-8 oz glass jar	4°C	100 g
FLUORIDE	WATER	28 days	1-500 ml HDPE	None	100 ml
	SOIL	28 days	1-500 ml HDPE		50 g
FREE LIQUIDS	SOIL/WASTE	28 days	1-liter HDPE	4°C	500 ml
HARDNESS	WATER	6 months	1-500 ml HDPE	HNO <sub>3</sub> to pH<2	100 ml

**TABLE 2**  
**WET CHEMISTRY (Continued)**

PARAMETER	MATRIX	HOLDING TIME from sample collection date	CONTAINER	PRESERVATIVE	MINIMUM SAMPLE VOLUME
NITROGEN, AMMONIA	WATER	28 days	1-500 ml HDPE	H <sub>2</sub> SO <sub>4</sub> to pH<2, 4°C	100 ml
	SOIL/SLUDGE	28 days	1-500 ml HDPE	4°C	100 g
NITROGEN, KJELDAHL	WATER	28 days	1-liter HDPE	H <sub>2</sub> SO <sub>4</sub> to pH<2, 4°C	500 ml
	SOIL/SLUDGE	28 days	1-8 oz glass jar	4°C	10 g
NITROGEN, NITRATE	WATER	48 hours	1-500 ml HDPE	4°C	100 ml
	SOIL	48 hours after soil extraction	1-8 oz glass jar	4°C	20 g
NITROGEN, NITRATE + NITRITE	WATER	28 days	1-liter HDPE	H <sub>2</sub> SO <sub>4</sub> to pH<2, 4°C	100 ml
	SOIL	28 days after soil extraction	1-8 oz glass jar	4°C, H <sub>2</sub> SO <sub>4</sub> to pH<2	20 g
NITROGEN, NITRITE	WATER	48 hours	1-liter HDPE	4°C	100 ml
	SOIL	48 hours after soil extraction	1-8 oz glass jar	4°C, H <sub>2</sub> SO <sub>4</sub> to pH<2	20 g
OIL AND GREASE	WATER	28 days	1-liter clear glass jar	H <sub>2</sub> SO <sub>4</sub> to pH<2, 4°C	1000 ml
	SOIL	28 days	1-8 oz glass jar	4°C	50 g
ORGANIC CARBON TOTAL	WATER	28 days	1-250 ml amber glass	H <sub>2</sub> SO <sub>4</sub> to pH<2,	100 ml
	SOIL	28 days recommended	1-120 ml glass jar	4°C	10 g

**TABLE 2**  
**WET CHEMISTRY (Continued)**

PARAMETER	MATRIX	HOLDING TIME from sample collection date	CONTAINER	PRESERVATIVE	MINIMUM SAMPLE VOLUME
OXYGEN, DISSOLVED	WATER	ANALYZE IMMEDIATELY	1-liter clear glass jar	None	300 ml
pH	WATER	24 hours	1-500 ml HDPE	None	100 ml
PHENOLS	WATER	28 days	1-liter clear glass jar	H <sub>2</sub> SO <sub>4</sub> to pH<2, 4°C	1000 ml
	SOIL/SLUDGE	28 days	1-8 oz glass jar	4°C	50 g
PHOSPHATE, ORTHO	WATER	48 hours	1-500 ml HDPE	Filter, 4°C	100 ml
PHOSPHORUS, TOTAL	WATER	28 days	1-500 ml HDPE	H <sub>2</sub> SO <sub>4</sub> to pH<2, 4°C	100 ml
	SOIL/SLUDGE	28 days after soil extraction	1-8 oz glass jar	4°C	50 g
SOLIDS, DISSOLVED	WATER	48 hours	1-500 ml HDPE	4°C	200 ml
SOLIDS, TOTAL/ VOLATILE/SUSPENDED	WATER	7 days	1-500 ml HDPE	4°C	200 ml
	SOIL/SLUDGE	7 days	1-8 oz glass jar	none	20 g
SPECIFIC CONDUCTANCE	WATER	28 days	1-500 ml HDPE	4°C	200 ml

**TABLE 2**  
**WET CHEMISTRY (Continued)**

PARAMETER	MATRIX	HOLDING TIME from sample collection date	CONTAINER	PRESERVATIVE	MINIMUM SAMPLE VOLUME
SULFATE	WATER	28 days	1-500 ml HDPE	4°C	200 ml
SULFIDE	WATER	7 days	1-500 ml HDPE	ZnAC/NaOH to pH>9, 4°C	200 ml
	SOIL/SLUDGE	7 days	1-8 oz glass jar	4°C	50 g
SULFITE	WATER	ANALYZE IMMEDIATELY	1-500 ml HDPE	4°C	200 ml

NOTES: HDPE = High Density Polyethylene  
ZnAC = Zinc Acetate

Several wet chemistry analyses may be performed out of the same container if the preservative is identical. Container volume of 1 liter is recommended for allowances for reanalyses and internal QC.

FIGURE 2

BATCH: \_\_\_\_\_

SAMPLE(S): \_\_\_\_\_

MATRIX: \_\_\_\_\_

CLIENT: \_\_\_\_\_

DATE REPORTED: \_\_/\_\_/\_\_

REPORTED BY: \_\_\_\_\_

**ORTEK**  
OUT OF CONTROL FORM

SECTION:  
☐ RECEIVING  
☐ EXTRACTION  
☐ DIGESTION  
☐ METALS  
☐ WET CHEM  
☐ ORGANICS

**PROBLEM:**

- |  |  |
|--|--|
| <input type="checkbox"/> Hold Time missed            | <input type="checkbox"/> Hold blank contaminated |
| <input type="checkbox"/> Improper pH of sample       | <input type="checkbox"/> Lab blank contaminated  |
| <input type="checkbox"/> Improper sample temperature | <input type="checkbox"/> Calibration out         |
| <input type="checkbox"/> Insufficient sample volume  | <input type="checkbox"/> Check standards out     |
| <input type="checkbox"/> Improper Container          | <input type="checkbox"/> Surrogates out          |
| <input type="checkbox"/> Custody violated            | <input type="checkbox"/> BS/BSD recovery out     |
| <input type="checkbox"/> Program change              | <input type="checkbox"/> BS/BSD RPD out          |
| <input type="checkbox"/> _____                       | <input type="checkbox"/> MS/MSD recovery out     |
| <input type="checkbox"/> _____                       | <input type="checkbox"/> MS/MSD RPD out          |
| <input type="checkbox"/> _____                       | <input type="checkbox"/> _____                   |

**ACTION TAKEN:**

Person Notified: \_\_\_\_\_ Date of Notification: \_\_/\_\_/\_\_

Company: \_\_\_\_\_

Requested Action: ☐ Re-extraction for \_\_\_\_\_  
☐ Re-digestion for \_\_\_\_\_  
☐ \_\_\_\_\_  
☐ \_\_\_\_\_

Date Action Requested: \_\_/\_\_/\_\_ Turn Time Requested: \_\_\_\_\_

Holding Time Expires on: \_\_/\_\_/\_\_

PROBLEM RESOLVED: ☐ Yes ☐ No

Resolved by: \_\_\_\_\_

cc: QA Officer

Client File (Original)



### 2.3.2 Field Collection

Prior to collecting and shipping samples, clients are urged to contact ORTEK to ensure adequate time for delivery of sample bottles, trip blanks and preservatives. The capacity of the lab to handle any quick turn analyses should also be verified. The potential hazard level of the samples and specific analytical requirements and any special QC or reporting needs should also be discussed and documented. Field instrument readings such as HNU, PID or field observations should be indicated on the paperwork accompanying the samples to aid lab personnel in avoiding saturation of instrument detectors. Arrangements for Saturday delivery to the lab, or after hours courier drop off, should be made prior to sample shipment.

Those samples requiring preservation at 4°C should be iced prior to packaging and shipment in order for the temperature to be within 4 ± 2°C upon receipt. "Blue ice" packs are usually not sufficient to keep the temperature at 4 ± 2°C so cube ice or block ice is recommended. Figure 2 presents the form ORTEK sends with sample bottles to alert clients to these requirements. Courier services, commercial shippers and delivery in person by the client, all necessitate that the sample be iced as soon as the sample has been taken to ensure that all reasonable effort was made to properly chill the sample.

Field personnel should initiate either an ORTEK or client specific Chain-of-Custody Form, and indicate the analyses required. Sample containers should be labeled to indicate the sample location, date, time, sampler and preservatives used. Any trip blanks necessary should be listed on the Chain-of-Custody Form. Containers as listed in Table 2 are recommended to ensure that the sample is compatible with the intended analysis. ORTEK Sample Receiving personnel will examine the condition, preservation, container and documentation. Any discrepancies will be noted on an Out-of-Control Form (Figure 3). The client will be notified before the sample is accepted for analysis and logged into the laboratory sample tracking system. Details of the ORTEK log-in and sample receipt process is contained in SOP OP-2.

### 2.3.3 Laboratory Storage

Samples are stored in restricted access refrigerators or on shelves which are numbered in accordance with SOP OP-12. This sample storage location number is entered on the Chain-of-Custody and the sample label. Soil samples are stored separately from water samples and suspected medium or high level organic samples are segregated from the other organic samples. Holding blanks are prepared for volatile organic analysis and stored with the samples in accordance with SOP OP-18.

The refrigerated storage temperature is monitored by a digital system linked to the building security alarms. The system monitors the temperature every 15 seconds and an audible alarm is sounded if the temperature exceeds the upper range of 10°C for more than an hour. After hours, the temperature alarm sounds at the security agency and laboratory management personnel are called. The upper range was set at 10°C to compensate for door openings to retrieve and replace samples. The temperature probes were initially factory calibrated against a reference and are checked biweekly against an independent thermometer. Temperatures are recorded according to SOP OP-6 and thermometer calibration is done annually against an NIST reference thermometer in accordance with SOP OP-4.

After analysis, samples are moved to a refrigerated holding area. Metals samples are stored at room temperature after digestion and are grouped by the blank number analyzed with them. All samples are routinely held 30 days after reports are released, unless other arrangements for longer storage have been made. Any samples with analytical results indicating that they are hazardous waste are flagged in accordance with SOP OP-14.

### 2.3.4 Sample and Waste Disposal

Aqueous samples and metal digests that are not classified as hazardous based on ORTEK's analyses and are within the Green Bay Metropolitan Sewage District discharge limits are emptied into the sink and flushed with tap water. To reduce plugging, aqueous samples with significant amounts of solids are not emptied down the drain. High solids aqueous samples and soil samples above the TCLP limit as total analyses are emptied into a waste barrel. A

sample for TCLP analysis is collected from the barrel. If the TCLP analysis indicates that the waste is not hazardous, the TCLP results are sent to and reviewed by the landfill. A local waste hauler transports the waste to the landfill. If the TCLP analysis indicates that the waste is hazardous, the barrel is overpacked and a hazardous waste hauler disposes of the waste. Laboratory generated solvent wastes are segregated into chlorinated solvent barrels and nonchlorinated solvent barrels. All known PCB sample and solvent waste is also separated and disposed of by a hazardous waste hauler. Details of the laboratory waste disposal protocol is contained in SOP OP-14.

#### 2.4 Security

ORTEK maintains a controlled access facility to ensure client confidentiality, proper sample custody and document control in accordance with SOP OP-13.

Visitors are required to sign in with the receptionist and are issued visitor badges. All visitors are accompanied by an ORTEK employee while in the laboratory and data operations areas.

Managers and analysts are assigned unique code numbers to activate and deactivate the security alarm system and a printout of alarm activity is provided to the Laboratory Director by the security firm. Security breaches occurring during non-working hours release an alarm to the security agency who alerts the local police and the laboratory director.

Computer access to client records, financial data and analytical data is restricted in accordance with SOP OP-15. Backup of the computer system and storage of the files is also detailed in this SOP.

Dependent on the QC review and data approval responsibilities and authority, each analyst or employee is restricted to the areas of the Laboratory Information Management System they can access or revise. No data or client files are removed from the facility and all working data files are controlled by a check out card system. QA reports to clients that include other client samples are censored so that sample results are not traceable to the source.

### 3.0 LABORATORY ORGANIZATION AND RESPONSIBILITY

The Laboratory Director has overall responsibility for the technical quality, cost control, laboratory personnel management, and adherence to project schedules. The Laboratory Quality Assurance Officer is responsible for monitoring the quality of laboratory work and taking appropriate actions to ensure that quality standards are being met. The QA Officer reports directly to the President and is independent of laboratory cost or profit responsibilities, schedules and personnel supervision other than QA Assistants. Responsibilities for fulfilling day to day quality control requirements is delegated to each Laboratory Section, and the performance monitored by the QA Officer. The Section Managers (Organics, Metals, Wet Chemistry, Client Services) are responsible for technical quality of work within their respective sections, including adherence to prescribed procedures for calibration, preventive maintenance, data validation, training, out-of-control forms and corrective actions. The Section Managers are responsible for meeting project commitment dates, (including preparation and analysis of samples within holding times), and reporting data and QA information as required by the client. Each Analyst is responsible for implementing and documenting this Laboratory QA Program in daily activities which includes the preparation of out-of-control forms, and taking corrective actions in accordance with SOP OP-16 if quality criteria are not met.

The specific responsibilities and authority of ORTEK personnel for QA/QC activities are described below. Resumes of personnel are available upon request. An organizational chart indicating reporting and communication lines is contained in Figure 4.

#### 3.1 President

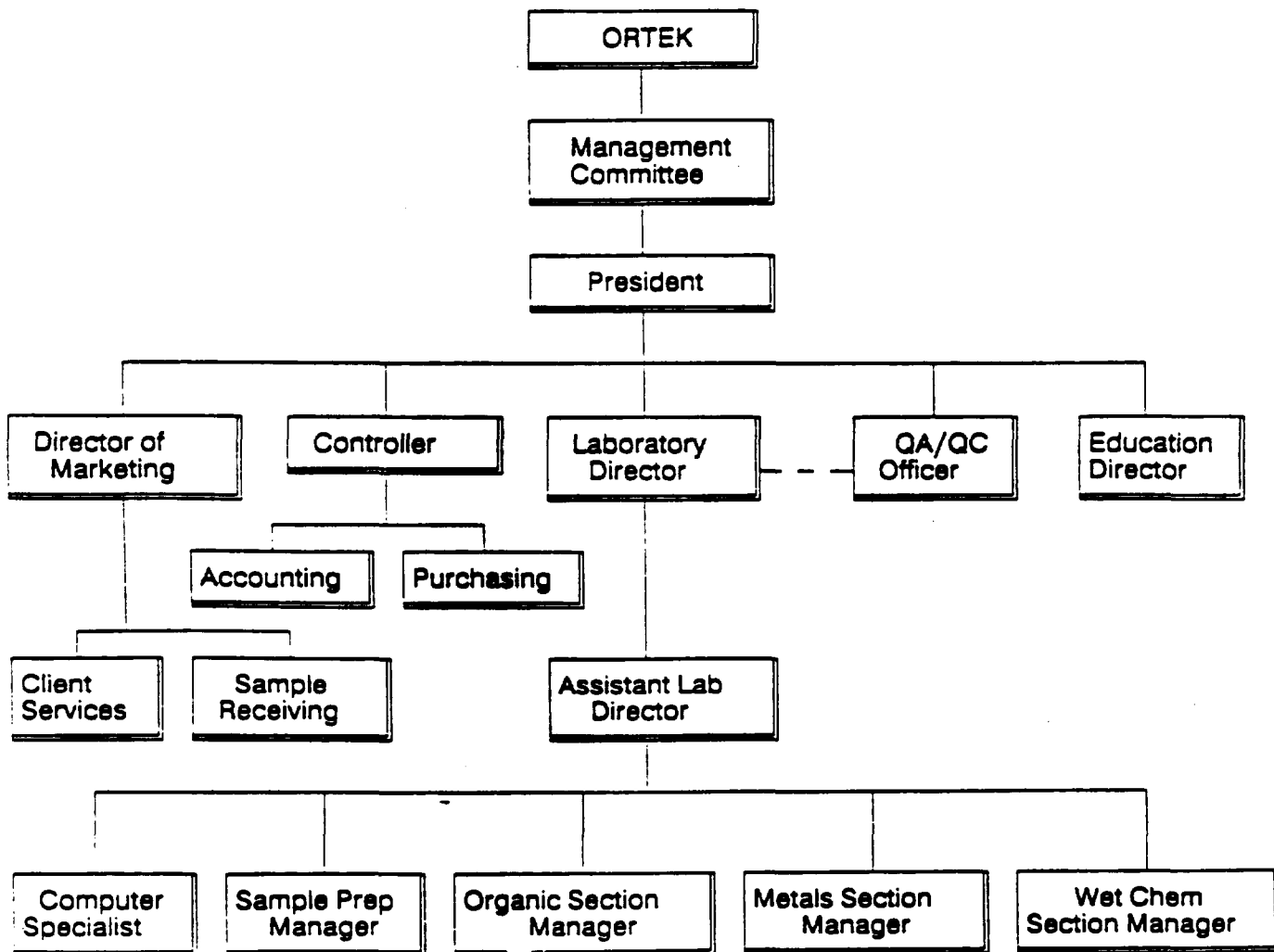
The President is responsible for long range planning and establishing the operating policies of the laboratory. He provides the resources and commitment to the Laboratory QA Officer to implement this QA Program Manual. He provides for strategic planning and communicates with the Board of Directors on profit, scheduling and resource issues. Quality related laboratory performance issues are relayed to him in monthly QA reports prepared by the QA Officer.

#### 3.2 Laboratory Director

The Laboratory Director is responsible for hiring, assignment of personnel, and the purchase of new equipment. He reports to the President and is responsible for the management of laboratory resources to accomplish designated goals and turnaround times.

## FIGURE 4

### ORTEK MANAGEMENT STRUCTURE



He assesses productivity of each section of the laboratory and determines with the Section Manager how to optimize efficiency without compromising quality.

Additional Laboratory Director's duties and responsibilities include the following:

- Direct the laboratory's analytical programs and physical operations including mobile laboratory activities.
- Coordinate and prioritize projects and associated workloads.
- Execute laboratory administrative functions.
- Ensure that analytical methods comply with client needs and regulatory requirements.

### 3.3 Assistant Laboratory Director

The Assistant Laboratory Director provides for day-to-day technical direction to laboratory personnel. He evaluates analytical techniques, SOPs, operation of instrumentation and provides recommendations for improvement to the Laboratory Director. In addition, the Assistant Laboratory Director:

- Oversees the log-in of samples received and tracks status.
- Supervises the verification of software for data processing.
- Manages laboratory daily analytical operations.
- Supervises and reviews Quality Control activities performed as part of routine analytical operations.
- Supervises maintenance and service of laboratory equipment.

### 3.4 Director of Marketing

The Marketing Director is responsible for coordinating the project management, client services and marketing efforts of the Laboratory. This involves coordinating with the Laboratory Director in ensuring that the analytical needs of the client are met and with the QA Officer in ensuring that the client's Data Quality Objectives (DQO's) are defined and met. The Marketing Director reports to the President.

For assigned projects, his staff coordinates field supplies, tracks sampling and sample analysis status, maintains contact with the client project manager, and

reviews data for completeness. He keeps the Lab Director apprised of project schedule, analysis and QA status.

The Director of Marketing is also responsible for obtaining feedback from clients on quality and timeliness of service. He supervises preparation of price quotes, responses to RFQ's, proposals, SOQs, and other sales oriented literature.

### **3.5 Laboratory QA Officer**

The Laboratory QA Officer has the authority to stop production of data in the laboratory, when review of the QC data or analytical procedures indicates that data quality is compromised or is not sufficient to meet client requirements. She reports directly to the President and communicates QC deficiencies and corrective actions to the Lab Director and affected Section Managers. Other primary duties and responsibilities of the position are:

- Update QA Program Manual at least annually and maintain distribution list.
- Responsible for writing, maintaining and distributing laboratory SOPs.
- Conduct laboratory and data audits to assess effectiveness of QA Program with a monthly report in writing to Lab Director and President.
- Responsible for completion of Monthly Progress Reports (NEESA, HAZWRAP projects) and other client QA reports when requested in accordance with SOP OP-17.
- Maintain laboratory certification/approval records, review performance evaluation sample data, and provide responses to certifying agencies as required.
- Respond to client data challenges and provide feedback to management on outcome of challenges.
- Provide technical assistance to Section Managers by defining new method validation requirements and instrument detection limit verification. Calculate method accuracy, precision and control chart limits.

### **3.6 Section Managers**

The laboratory is divided into three technical sections, each headed by a Section Manager. Each Section Manager has hands-on experience in all of the tests in the section and serves as the lead analyst and

technical resource to the staff. Each reports to the Laboratory Director. Each Section Manager's duties and responsibilities are:

- Organize, schedule and prioritize the section analyses with consideration for sample-holding times and client due dates.
- Check that required number and type of QC checks are performed.
- Assign analysts for data processing and data validation activities.
- Review and approve section analytical data in accordance with SOP OP-17 and submit to Client Services.
- Evaluate instrument performance and supervise instrument calibration and preventive maintenance programs.
- Report out-of-control situations to the Laboratory QA Officer.
- Implement and verify the effectiveness of corrective actions in accordance with SOP OP-16.

### 3.7 Analysts

Laboratory analysts are responsible for determining and documenting the quality of the data they generate. They are responsible for equipment maintenance, calibration and documentation in accordance with ORTEK SOPs. They are to include the appropriate number and type of QC samples as defined by this QA manual, analytical method, and client request. They are to identify out-of-control situations and document them to the Section Manager and QA Officer for resolution. They are to conduct corrective actions promptly and document their effectiveness.

### 3.8 Support Staff

Delivery of a quality product to clients is not limited to lab analysis. Ancillary to analytical operations are the functions of sample receipt, client services, accounting, and education.

Sample receiving personnel ensure that submitted samples are properly documented, preserved and entered into the Laboratory Management Information System. Sample receiving personnel clarify vague or questionable analysis requests with the client. Conversations with the client are documented and problems resolved before samples are logged in for



analysis. Proper sample labeling, computer log-in and analyses are then verified by Client Services and the client contacted to clarify discrepancies. Client Services prepares and assembles client data packages in accordance with SOP OP-10 to include the invoice, chain-of-custody forms and analytical result sheets. Quality concerns are typographical errors, mathematical calculations and accurate sample/client identifiers. Proper storage of client records and data are the responsibility of Client Services in accordance with SOP OP-11. Accounting personnel verify correct invoice totals and per sample charges against price quotes and/or the Analytical Services Manual list prices.

### 3.9 Training

The Education and Training Director is an integral part of the QA Program since well trained personnel are the foundation of quality data generation.

ORTEK has received a grant from the U.S. Department of Education under the Carl D. Perkins Vocational Educational Act of 1984 to provide basic and advanced environmental analytical training to Native American ORTEK employees. Course curriculum includes principles of instrumental analysis, QA/QC operations, and good laboratory practices. A classroom and teaching lab is located in the Western Avenue lab building. ORTEK laboratory technicians are encouraged to participate in the course. Details of employee training are included in SOP OP-09.

New employees are required to read this laboratory QA Manual and sign that they have accepted its requirements. On a method-by-method basis each analyst first reads and signs the applicable SOP, performs the method, and analyzes independently prepared QC samples at least twice with acceptable results before they can be considered-"certified" to produce sample data. Documentation of Certification is recorded on Figure 5 and kept by the QC Officer.

On an ongoing basis, results of client/government agency performance evaluation samples and blind internal performance evaluation samples are recorded for each analyst to provide feedback on their performance. The QC Officer maintains these records. Figure 6 is used to record these sample results.

FIGURE 5  
ORTEK Training Form

=====

Trainee: \_\_\_\_\_

Method: \_\_\_\_\_

Trainer: \_\_\_\_\_

Date of Certification: \_\_\_\_/\_\_\_\_/\_\_\_\_

This is to certify that the trainee can perform the above method without supervision. The trainee has successfully completed the following steps in training:

1. Has been shown all steps of the test \_\_\_\_\_
2. Has performed the test under supervision \_\_\_\_\_
3. Can independently complete all necessary calculations \_\_\_\_\_
4. Has successfully analyzed EPA performance samples on two separate occasions \_\_\_\_\_

<u>Date</u>	<u>Reference True Value</u>	<u>Acceptance Limit</u>	<u>Analyst Result</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

=====

Signatures:

Trainee: \_\_\_\_\_

Trainer: \_\_\_\_\_

QC Officer: \_\_\_\_\_

FIGURE 6  
ORTEK  
BLIND PERFORMANCE SAMPLE EVALUATION

ANALYTE: \_\_\_\_\_

ANALYST: \_\_\_\_\_

METHOD: \_\_\_\_\_

MATRIX: \_\_\_\_\_

BLIND SAMPLE #: \_\_\_\_\_

SOURCE: \_\_\_\_\_

DATE ANALYZED: \_\_\_\_\_

<u>ANALYST</u> <u>VALUE</u>	<u>UNITS</u>	<u>TRUE</u> <u>VALUE</u>	<u>UNITS</u>	<u>ACCEPTANCE</u> <u>LIMITS</u>	<u>Limit</u> <u>Basis</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Comments/Corrective Action: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

New employees also review laboratory safety rules before any lab work can start. Annually, videotapes from a commercial vendor are viewed. Attendance is mandatory and certificates of training are issued. A Safety Committee consisting of at least one analyst from each section of the lab meets regularly to discuss employee concerns in their areas and make written recommendations to management. The Chemical Hygiene Plan and Spill Response Plan is supplied to all analysts and it is stressed that safety is everyone's responsibility.

#### 4.0 QA OBJECTIVES

The primary QA objective of the laboratory is to develop, implement and document the specific QC criteria that provide for legal, defensible data. Regardless of the client or end use of the data, all analytical results are to be traceable to properly stored and secured samples analyzed by the appropriate method on a correctly calibrated instruments. All data are of known precision and accuracy as determined by the results of the internal QC checks.

The requirements for acceptable internal QC check results and frequency are often established by the client by use of Data Quality Objectives (DQOs).

DQOs are qualitative and quantitative statements that specify the quality of the data necessary to support the client's or regulatory agency's use of the data. DQOs are based on the end use of the data to be collected, the type of decision to be made, the allowable uncertainty in the decision and the risk associated with a "wrong" decision. Clients are encouraged to define their data needs and uses, applicable regulatory limits of concern, critical samples and specific methodology requirements, as soon as possible, for their project in order to ensure use of the proper DQO.

DQO's have been segregated into levels by the US EPA, Navy and DOE in order to support the different types of decisions that may be based on the analytical data. Five levels of data quality were originally defined by the US EPA under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), more commonly referred to as Superfund. DOE/HAZWRAP adopted the same levels but labeled them as Levels A-E. The Navy selected three of the DOE/EPA levels C-E. Table 3 presents all of these DQO levels and a brief description of their intended data uses. Table 4 lists the laboratory QC requirements ORTEK follows for each level.

TABLE 3

DQO LEVELS AND DATA USES

EPA LEVEL	DOE HAZWRAP LEVEL	NAVY LEVEL	DATA USES(S)	TYPE OF ANALYSIS	LIMITATIONS
I	A	-	Screening, process monitoring, field health and safety monitoring	Real time in-field measurements	Nonspecific, high detection limits, background levels interfere
II	B	-	Initial site characterization, process monitoring	On-site lab, same day turnaround	Concentration usually reported as range, compound identity uncertain
III	C	C	Risk assessment, site characterization on nonSuperfund sites. Hazardous waste/RCRA analyses, remediation monitoring	EPA approved methods in off-site or on-site lab	Tentative organic compound identity unless MS or 2nd column GC analyses used
IV	D	D	Superfund sites PRP determination risk assessment site characterization remediation monitoring	Quantitative, legally defensible data package using CLP methods (ICAP, GFAA, GC/EC, GC/MS)	TAL & TCL list compounds only available. Independent data validation of packages requires time and dollars
V	E	E	Risk assessment PRP determination	Unusual matrices or analyses requiring method development (i.e., tissues, explosives)	Costly, limited number of labs available, interested and qualified, long lead time for method validation required

PRP = Potentially Responsible Party

TABLE 4

## ORTEK LABORATORY REQUIREMENTS FOR DQOs

EPA LEVEL	DOE HAZWRAP LEVEL	CALIBRATION	LAB BLANK	BLANK SPIKE	LAB DUPLICATE	MATRIX SPIKE	MATRIX SPIKE DUPLICATE	DATA PACKAGE
III	C	5 point initial cali- bration and check every 12 hours  GC 2nd column confirmation	1 per batch	1/20 as an LCS metal	1/20 (metals and wet chemistry only)	1/20	1/20 (organics only)	Batch size variable. CLP Forms only.  Blank spike control charts
IV	D	CLP requirements	CLP 1/20, surrogate recovery	1/20 for PCB metal LCS	NR (organics)  1/20 metals	CLP 1/20	CLP 1/20 (organics only)	Batch size 20. Full CLP package.  Blank spike control charts
V	E	3 point initial cali- bration and check every 12 hours	1 per batch	1 per batch	NR	NR	NR	Batch size variable. Sample result sheets, blank results, Blank spike control charts

**Legend:** CLP = Contract Laboratory Program  
NR = Not Required

The purpose of complying with these specified DQO levels is to define the precision, accuracy, representativeness, comparability and completeness achieved for the sample analysis. In general, data generated by ORTEK should:

- Be accurate in comparison to true or reference values within an accepted tolerance limit.
- Be precise to within a specified degree of variability between replicate measurements.
- Be representative of the source sampled.
- Be comparable to analytical results obtained by other laboratories following the same QA level and method.
- Be complete in terms of the amount of valid data obtained versus all analyses requested.

These general QA objectives are fulfilled by the ORTEK QA program that defines the specific QC samples to be analyzed and their acceptable limits. The limits are based on historical data collected and method validation studies conducted in-house. When not enough data have been collected by ORTEK to set acceptance limits, advisory limits are set using EPA data. These limits and the frequency of QC sample analyses are specified in Section 10.0 and SOP OP-21.



5.0 SAMPLING PROCEDURES

As ORTEK does not provide for sample collection, this section is not applicable. Clients are advised to use the certified, clean sample containers supplied by ORTEK to collect their samples and contact ORTEK prior to collection to verify laboratory capacity and minimum sample volume requirements.

## 6.0 SAMPLE CUSTODY AND DOCUMENT CONTROL

A sample is legal evidence collected by the client representative of the site. In order for ORTEK to produce legally defensible data representative of a sample, the custody and documentation of the sample must be traceable and secure. This section discusses the lab operations necessary to ensure sample and document integrity. Figure 7 presents the flow of sample and analysis documentation in the laboratory. The sections below describe the specific documents generated and controlled.

### 6.1 Chain-of-Custody Documentation

The trail of the sample's journey, from collection to disposal, is documented by an unbroken written record that accounts for the secure location of the sample at all times. This unbroken written record is termed the chain-of-custody. A sample is considered in custody if it is:

- In a person's hands-on possession.
- In a person's view.
- Locked or sealed so tampering can not be done.
- In a secured area, restricted to authorized personnel only.

At ORTEK, the entire laboratory is considered a secured area restricted to analysts only, and the chain-of-custody is considered unbroken until the sample is disposed of by the sample custodian. Intralab transfer of custody occurs only, when samples or sample extracts are transported between the West Mason Street and Western Avenue facilities and is documented in Figure 8.

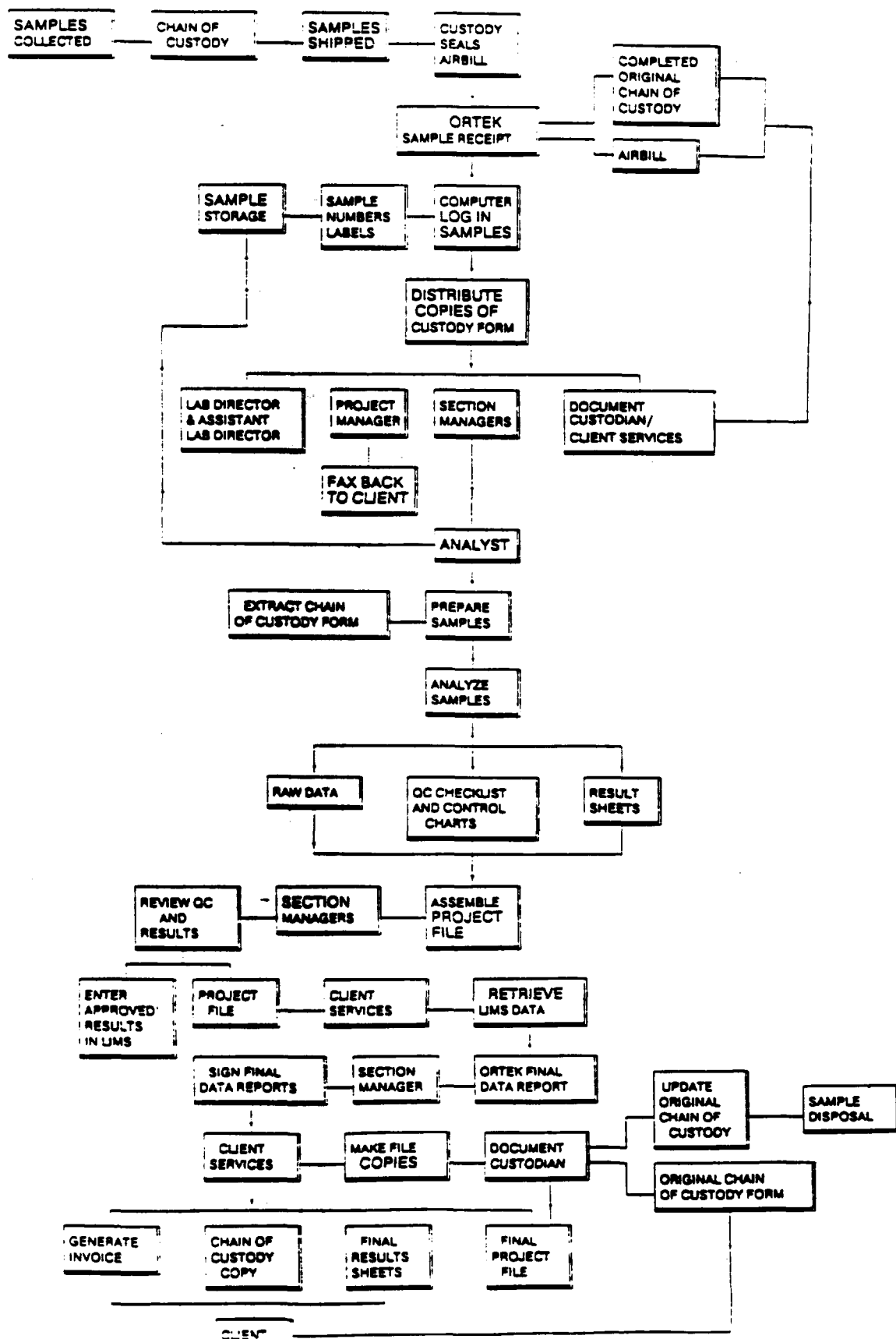
The chain-of-custody is documented in Figure 9. These forms are sequentially numbered. The chain number is entered in the sample log-in Form (Figure 10) to enable cross referencing of ORTEK sample numbers, client ORTEK batch numbers, sample storage location and custody form. Any client specific QA report or DQO level needed should also be entered in the Special Instructions Comments section to alert analysts and the QA Officer.

#### 6.1.1 Sample Receiving Procedures

The specific steps of sample reception are detailed in SOP OP-2. Briefly, this procedure consists of the following steps:

# FIGURE 7

## SAMPLE DOCUMENTATION FLOW



# ORTEK

## EXTRACT CHAIN OF CUSTODY FORM

Company Name: \_\_\_\_\_

Project No./Client \_\_\_\_\_

Extracted By: \_\_\_\_\_

No.: 126

Date	Time	Sample I.D./Description	No. of Bottles					Total	ANALYSIS REQUESTED										Remarks	Lab Use Only ID Number

INCLUDE EXTRACTION LOG AND ALL OTHER APPROPRIATE PAPERWORK WITH THIS EXTRACT CHAIN OF CUSTODY.

Date Received: \_\_\_\_\_

Date Due: \_\_\_\_\_ IRISH

### CUSTODY TRANSFERS - INTERNAL TO ORTEK

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					

Results To: \_\_\_\_\_

Attention: \_\_\_\_\_

COMMENTS/SPECIAL INSTRUCTIONS

FIGURE 8

## CHAIN OF CUSTODY/ANALYSIS REQUEST FORM

### Sampler

DATE: March 1968

[illegible]

COMMENTS/SPECIAL INSTRUCTIONS

**(1) 0 Pts: Beginn des VCLP**

* Sample Type	SW - Surface Water	H - Hazardous Liquid
S - Soil	DW - Drinking Water	A - Air
SE - Sediment	WW - Wastewater	O - Oil
SO - Solid	GW - Groundwater	X - Other

Date Received: \_\_\_\_\_  
 Date Due: \_\_\_\_\_ DRUSH  
 Quotation #: \_\_\_\_\_ (approved by lab)  
 Purchase Order #: \_\_\_\_\_

Sealed For Shipping By:

Seal #

**Results To:****Billing Address:**

**Attention:**

**Phone:****FAX**

## CUSTODY TRANSFERS

Not required by

Date \_\_\_\_\_

Time

Noted by

Date: \_\_\_\_\_

Flow

1.

**2.**

Received for Laboratory:

**Shipping Details - To Be Completed By ORTEK**Seal Intact Upon Receipt by Laboratory ☐ Yes ☒ No

**Method of Shipment:**

Contents Temperature \_\_\_\_\_ • C Rating # \_\_\_\_\_

3400 West Main Street  
Green Bay, WI 54307 9435  
(919) 490-2272

**ORTEK**

## Time Collected

**FIGURE 10**  
**SAMPLE LOG IN FORM**

[illegible]

1. The condition of the shipping containers and sample bottles will be inspected and documented upon receipt and the temperature measured and recorded (if appropriate). If samples were shipped as hazardous materials this procedure is done in the hood and the sample custodian must wear gloves and a respirator in case of sample leakage.
2. The condition of the custody seals (intact/not intact) (Figure 9) will be inspected upon receipt and the client notified of any damage.
3. The presence or absence of the following documents accompanying the sample shipment will be verified and an Out-of-Control Form completed to document discrepancies:
  - Airbills or airbill stickers.
  - Custody seals.
  - Custody form.
  - Sample tags/labels.
4. The sample custodian shall sign and date all forms (e.g., custody records, packing lists, and airbills) accompanying the samples at the time of sample receipt.
5. The sample custodian shall contact the client to resolve discrepancies and problems such as absent documents, conflicting information, unclear analytical requests, broken custody seals, and unsatisfactory sample condition (e.g., improper preservation, leaking sample bottle) as listed on the Out-of-Control Form.
6. The sample custodian shall record the resolution of discrepancies and problems on the Out-of-Control Form and forward the form with the original Chain-of-Custody Form to Client Services. Client Services will fax the completed custody form back to the client for verification.

#### 6.1.2 Sample Log-In Procedures

The specific steps of sample log-in into the Laboratory Information Management System (LIMS) are detailed in SOP OP-2. Briefly, this procedure consists of the following steps:

1. The sequential ORTEK laboratory sample number and client sample number are entered into LIMS by the sample custodian. The requested turnaround time, due date, holding time, client name, address, date collected and matrix are also entered for each sequential ORTEK laboratory sample number. The appropriate refrigerator storage location code is also entered.
2. The sample labels containing the information are then printed by LIMS and placed on each sample bottle.
3. Samples are placed in the refrigerator location printed on the label. The sample custodian alerts the appropriate Section Manager of samples with short holding times or quick turn requests. Analysts must return all containers to the refrigerator location.
4. The chain-of-custody and all supporting documentation received with the samples, or generated by the sample custodian (i.e., Out-of-Control Forms) are copied for distribution to the Laboratory Director, Assistant Laboratory Director, Section Managers, Project Manager and Client Services. All original documentation is sent to Client Services for inclusion in the client project file.

#### 6.1.3 Analytical Documentation

Any entry into laboratory notebooks or forms must include the date, and the signature or initials of the person making the entry. Initials used by each analyst and their signature are recorded on the acceptance page of this QA Manual and the original is kept by the QC Officer. Sample extraction, preparation logs, and standards preparation logs must be reviewed at least weekly by the Section Managers. Section Managers will countersign and date the pages reviewed. This signature indicates that they have checked the information for compliance with the applicable SOPs.

All laboratory documentation must be made in ink, preferably permanent ink. The use of pencil is not allowed. All corrections to documentation must be made by crossing out the error with a single line and placing the correction above it. The error line must be initialled and dated by the person making the



correction. No error correction fluid or "white out" is permissible.

Bound logbooks with sequentially numbered pages are preferable for recording laboratory data. Loose-leaf forms in a binder or spiral/bound notebooks may also be used but the pages must be numbered. All preprinted laboratory forms must contain the date(s) they apply to and the name ORTEK. Copies of all applicable pages must be included with the data for the project file, or the logbook and page number where the documentation can be found must be traceable to the final reported results either by batch number, sample number or both.

## 6.2 Document Control

The goal of ORTEK's document control system is to be able to supply to any client all documents relating to the analysis of his or her samples. These documents include but are not limited to; chain-of-custody forms, sample bottle lots used, sample tags (if removable), airbills, price quotes, bench sheets, logbooks, telephone conversation records, out-of-control forms, QA and/or progress reports, corrective action forms, accompanying QC sample results, calibration records, worksheets with calculations, instrument printouts, and final result sheets. The criteria for an acceptable document control system is that the data and records are secure, retrievable and complete.

The following document control procedures are followed, to assure that these laboratory records are able to be assembled and stored, for efficient retrieval upon request. Details of document storage, tracking and disposition are contained in SOP OP-11.

- All laboratory records are stored in the secured laboratory area so they are not accessible to laboratory visitors or instrument service personnel.
- Locked file cabinets are utilized to store completed records, and a check out card system is used for removal of working project files or archived files.
- All original laboratory forms and data will be included in the project file, when all data from the project is compiled.
- All preprinted laboratory forms and logbook pages must contain the signature of the person conducting the work and the date the work was performed.
- The pages in bound and unbound logbooks must be

sequentially numbered. No pages will be removed. Bound logbooks themselves will also be assigned a unique number.

- Proper error correction procedures must be followed. No information shall be obliterated or rendered unreadable. The unused portions of documents shall be crossed out with a "Z" and the person's initials and date entered.
- All documents, notebooks and forms are to be completed in ink.
- Completed logbooks are kept in each section by the Section Manager, for quick reference. Completed project files are stored on-site for the last year. Off-site secured storage for older records is utilized for clients specifying storage for more than 1 year.
- Unless specified otherwise, project files are kept for 3 years after completion of the project.
- Any changes to LIMS must be documented on a Sample Change Record (Figure 11), and be done by the Sample Custodian or Computer Support Technician.
- All telephone conversations with clients must be documented on an ORTEK Telephone Conversation Record (Figure 12), and the original filed with the project file. All faxes, fax cover sheets, and transmission reports must also be filed in the project file.
- General laboratory records including detection limit studies, method development data, SOPs, training and personnel files, health and safety records, audit reports, control charts and performance evaluation results will be kept as long as ORTEK is in existence.

FIGURE 11

BATCH # \_\_\_\_\_ SAMPLE ID# \_\_\_\_\_

SAMPLE CHANGE RECORD

Please mark appropriate box for LIMS change. Also initial appropriate box if you have completed the change or check appropriate box for person who needs to make the change.

PLEASE MAKE CHANGE/DATE:

Sample Rec. \_\_\_\_\_  
Misc \_\_\_\_\_  
WetChem \_\_\_\_\_  
Metals \_\_\_\_\_  
Organics \_\_\_\_\_

CHANGE COMPLETED/DATE:

Sample Rec. \_\_\_\_\_  
Misc \_\_\_\_\_  
WetChem \_\_\_\_\_  
Metals \_\_\_\_\_  
Organics \_\_\_\_\_

CHANGE FROM:

LAB # \_\_\_\_\_

CHANGE TO:

LAB # \_\_\_\_\_

BATCH # \_\_\_\_\_

BATCH # \_\_\_\_\_

LOGIN DATE \_\_\_\_\_

LOGIN DATE \_\_\_\_\_

DUE DATE \_\_\_\_\_

DUE DATE \_\_\_\_\_

COLLECTION DATE \_\_\_\_\_

COLLECTION DATE \_\_\_\_\_

COLL-LOCATION \_\_\_\_\_

COLL-LOCATION \_\_\_\_\_

PRES-METHOD \_\_\_\_\_

PRES-METHOD \_\_\_\_\_

SAMPLE MATRIX \_\_\_\_\_

SAMPLE MATRIX \_\_\_\_\_

ARCHIVES \_\_\_\_\_

ARCHIVES \_\_\_\_\_

ADD TEST \_\_\_\_\_

DELETE TEST \_\_\_\_\_

REASON FOR CHANGE \_\_\_\_\_

REQUESTED BY: \_\_\_\_\_

COPIES TO:

COC FILE

WORKING FILE

ORG. EXTRACTION

METALS

WETCHEM

ORGANICS

OTHER \_\_\_\_\_

2005

DATE \_\_\_\_\_

TIME \_\_\_\_\_

PHONE - -

SAMPLE CHANGE (LAB/SAMPLE ID) \_\_\_\_\_

Indicate Changes/Status Below

## COMMENTS

TO: WET CHEM METALS ORGANIC LOGIN COC FILE

FROM: DLS OTHER

## 7.0 CALIBRATION PROCEDURES AND FREQUENCY

The purpose of calibration is to verify that the analytical instrument/equipment can provide data of known and acceptable precision and accuracy. Instrument calibration is performed by the analyst in accordance with method and instrument SOPs. Equipment calibration is periodically performed at prescribed intervals for balances, pipettes and thermometers which are relatively stable in performance. The Section Managers are responsible for equipment calibration and for supplying the documentation to the QA officer.

Laboratory analysts record and document all instrumental calibration runs in designated Laboratory Instrument or Run Logbooks. These logbooks identify instrument operating parameters, settings, and performance data associated with each instrumental calibration run.

This section describes the general calibration practices by the analyte and instrument group. Instrument specific calibration procedures are detailed in SOPs E-1 through E-15.

### 7.1 Measurement Equipment and Supplies

ORTEK complies with good laboratory practices in the use of measuring equipment, glassware, laboratory pure water and chemical reagents. All laboratory glassware, balances, thermometers, and subsequent volume, mass, and temperature measurements are directly traceable to primary standards. Chemical reagents are purchased of the quality specified in the SOP and/or reference method. Table 5 lists the equipment calibration frequency and limits.

TABLE 5 EQUIPMENT PERIODIC CALIBRATION REQUIREMENTS

<b>INSTRUMENT</b>	<b>CALIBRATION FREQUENCY</b>	<b>ACCEPTANCE LIMIT</b>	<b>CORRECTIVE ACTIONS</b>
Analytical Balances	Daily: Sensitivity (with a Class "S" weight) Annually: Class "S" weights check Every 3 years: Class "S" weights check	See SOP OP-5  Difference less than 0.1 mg Difference less than 0.1 mg	Adjust, Sensitivity  Service balance  Replace weights
Ovens	Temperature readout device checked against indicating pyrometer semi-annually	$\pm 10\%$	Service oven
Thermometers	Calibrate in constant temperature bath at ice point against NIST reference thermometer	$\pm 0.5^{\circ}\text{C}$ or $\pm 0.2^{\circ}\text{C}$	Tag and remove from service, replace
Pipettors	Volume check quarterly	High volume ( $>100\ \mu\text{L}$ ): $\leq 1.0\%$ relative error and RSD Low volume ( $<100\ \mu\text{L}$ ): $\leq 2.0\%$ relative error and RSD	Service or replacement
NIST Thermometer	Recertified every 3 years		Replace

Laboratory volumetric glassware conforms to NIST Class A standards. Mechanical pipettes are calibrated quarterly with the MLA Pipette Volume Calibration Kit. All calibrations are recorded and documented in the designated Laboratory Calibration Logbooks. The SOPs for cleaning and storing glassware (OP-8) are posted at wash stations.

Laboratory balances are annually serviced and calibrated by an independent vendor manufacturer's service contract. Additional balance performance evaluations are conducted daily (before first use) by comparison against NBS Class S certified weights using SOP OP-5. Unacceptable performance requires service adjustments. Both balance service and daily calibrations are recorded and documented in designated Laboratory Balance Calibration Logbooks.

Laboratory thermometers are calibrated against a NIST certified thermometer annually using SOP OP-4 and recorded in the designated Laboratory Thermometer Calibration Logbook. Laboratory drying ovens, incubators, and refrigerators contain these calibrated thermometers. Temperature readings are recorded daily on the Laboratory Temperature Logsheet. Unacceptable deviation from the acceptable temperature range requires immediate corrective action as described in SOP OP-6.

Laboratory pure water is generated by a commercial on-line water purification system consisting of mixed resin deionizing and carbon filtration cartridges. Cartridges are routinely replaced and serviced by the manufacturer or as indicated by an on-line resistivity indicator recorded in accordance with SOP OP-6 or laboratory method blank contamination.

The Laboratory uses various types and purities of chemical reagents, solvents, and gases depending upon their intended use. Laboratory stock and working standards are derived from commercially available primary standards and solvents whenever possible. Section 2 detailed reagent, solvent and analytical standard practices.

## 7.2 Instrument Calibration Procedures

All instruments subject to calibration shall be uniquely numbered/identified so that calibration records can be traced to a specific instrument. EPA and manufacturer's specific calibration protocols will be followed. Source of analytical standards used, standard preparation and documentation instrument

calibration shall comply with the requirements in Section 2.0 and follow the appropriate SOP. Minimum operations necessary to satisfy most EPA criteria for calibration are contained in Table 6. Specific procedures are detailed in SOPs E-1 through E-15 and are briefly described below by instrument:

7.2.1 GC/MS VOCs and BNAs

- Every 12 hours the instrument is tuned and must meet EPA established abundance criteria for DFTPP or BFB to assure that instrument response meets EPA specifications.
- Generation of five point calibration curves, as the method requires, for all method compounds at least quarterly, or more frequently if needed. Recalibration is done when continuing calibration criteria is not met as specified in the EPA method.
- Verification of volatile system cleanliness by the analysis of at least one daily reagent blank.
- Maintain sample response within linear range of instrument by dilution.
- Addition of internal standards to each sample that must meet area count criteria of -50% to +100%.

7.2.2 GC VOCs

- Generation of five point calibration curves for all analyzed compounds at least quarterly, or prior to any sample analysis as stated in the analytical method. Recalibration is done when continuing calibration criteria is not met and the compound of interest is present in the sample.
- The initial calibration curve must have a Relative Standard Deviation (RSD) of  $\leq 20\%$  for Method 8010/8020, and  $\leq 10\%$  for Method 601/602 with continuing calibrations of  $\leq 15\%$ , and  $\leq 10\%$  respectively. (RSDs are calculated based on guidance found in SW846, Method 8000, Section 7.4.4.2.). Alternately, the linear regression performed must have a correlation coefficient greater than 0.995.



- Maintain sample response with linear range of instrument by dilution.
- Monitor consistency of instrument response through the analysis of a standard after at least every 20 sample analyses.
- Demonstrate system cleanliness through the analysis of at least one daily reagent blank.

TABLE 6

## INSTRUMENT CALIBRATION REQUIREMENTS

INSTRUMENT	CALIBRATION STANDARDS USED	CALIBRATION ACCEPTANCE LIMITS	CORRECTIVE ACTION	STANDARD SOURCE
FTIR	Wavelength calibration and curve, minimum 3 levels and blank	$\pm 5 \text{ cm}^{-1}$ true value	1) make new standards 2) service	Variable
AA (GF, CV)	Initial: 3 concentrations and blank Continuing: Midrange conc every 10 samples	$r > 0.995$ $\pm 10\%$ true value	1) make new standards 2) reestablish initial curve	Variable
ICAP	Initial: 1 concentration and blank	$< \text{CRDL or IDL}$ whichever is greater	1) make new standards	Spex or Inorganic Ventures
LACHAT UV-Visible Spectrophotometer	Initial: 3 levels and blank Daily: Check standard	$r > 0.995$ $\pm 10\%$ true value	1) make new standards 2) recalibrate	Variable
GC	Initial: 5 concentrations and blank	$\text{RF} < 20\% \text{ RSD or}$ $r > 0.995$ $< \text{detection limit}$ (except acetone and methylene chloride)	1) make new standards 2) recalibrate	Supelco Ultra
GC/MS	Tuning (DFTPP or BFB) Initial: 5 concentrations and blank Continuing: midrange conc.	EPA criteria RRF, RSD criteria for SPCC, CCC compounds for SPCC, CCC compounds	1) Retune, service 2) Recalibrate 3) Make new standards, recalibrate	Supelco Ultra
pH/Conductivity Meter	Daily: pH buffers 3 standard concentrations, conductivity standard	$\pm 0.05 \text{ pH unit}$ $\pm 10\%$ true conductivity	Clean or replace electrode, service	Variable

### 7.2.3 Pesticides and PCBs - GC/EC

- The initial calibration curve must have an RSD of  $\leq 20\%$  with a continuing calibration of  $\leq 15\%$ . (RSDs are calculated based on guidance found in SW846, Method 8000, Section 7.4.4.2.). Alternately, the linear regression performed must have a correlation coefficient greater than 0.995.
- Generation of five point calibration curves for all analyzed compounds monthly, prior to any sample analysis, or as stated in the analytical method. Recalibration is done when continuing calibration is not met and the compound of interest is present in the sample.
- Maintain sample response within linear range of instrument by dilution.

### 7.2.4 Metals - ICAP

- Analysis of at least one standard and a blank.
- Verification of system cleanliness and baseline maintenance through the analysis of a continuing calibration blank (CCB) after every ten samples. Detected metals must be less than Contract Required Detection Limit (CRDL).
- Verification of instrument stability through the analysis of a continuing calibration verification (CCV) standard after every ten samples. Recovery must be 90-110%.
- Determination of instrument performance by the analysis of an interference check sample (ICSAB) at the beginning and end of each run, or twice in an 8 hour shift with limit of 80% - 120%.
- Maintain sample concentration within the linear range of the instrument by dilution.

### 7.2.5 AA Furnace and Cold Vapor Mercury Analyzer

- Initial and continuing calibration must be recovered at 80-120% for the Cold Vapor Mercury Analyzer and 90-110% for AA.

- Verification of system cleanliness by a CCB analysis after every ten samples.
- Construction of at least a three point calibration curve for each element prior to the analysis of any sample set.
- Maintain sample response within linear range of instrument by dilution.

#### 7.2.6 pH and Ion-Selective Electrodes

- Construction of a three point (2 point for pH) calibration curve prior to the analysis of any sample.
- Maintain sample response within linear range of instrument by dilution.
- Verification of cleanliness of the analytical system through the analysis of a reagent blank (where applicable).
- Verification of instrument consistency through the analysis of a standard/buffer after the analysis of every ten samples (where applicable).

#### 7.2.7 Lachat Auto Analyzer

- Construction of a three point calibration curve prior to the analysis of any sample. The initial calibration curve must have an RSD of  $\leq 20\%$  and  $r^2$  of  $\geq 0.995$ .
- Monitor for the introduction of any interferences through the analysis of a reagent blank, prior to any sample analysis.
- Maintain sample response with the linear range by dilution.
- Verification of the consistency of instrument response through the analysis of a lab control standard (LCS) after every twenty sample analyses for DQO level D. DQO levels C & E require a LCS after every 10 samples.

### 7.3 Calibration Records

Records for periodically calibrated equipment (balances, thermometers, pipettes) must be kept by the Section Manager and include as appropriate:

- Identification number of equipment and type of equipment, or assigned unique equipment number.
- Calibration frequency and acceptable tolerances.
- Identification of calibration procedure used.
- Date calibration was performed.
- Identity of ORTEK personnel and/or external agencies performing calibration.
- Reference standards used for calibration (to be stored separately from any samples or reagents).
- Calibration data.
- Certificates or statements of calibration provided by manufacturers and independent service personnel traceable to NIST.
- Information regarding calibration acceptance or failure and any repair of failed equipment.
- Date of when next scheduled calibration is due.

Stickers or tags indicating when next calibration is due should be readily visible on equipment. Section Managers are responsible for ensuring recalibration is completed on time and documented.

For instruments and equipment that are calibrated when used (as often as daily), calibration consists of determining instrumental response against known standards or the preparation of a standard response curve. Records of these calibrations are maintained by ORTEK in two ways:

- The calibration data are kept with the affected analytical sample data (government projects, GC/MS).
- A log book or raw data folder contains all calibration data (Lachat, ICAP, AA, GC).

The first method provides response factor information directly with analytical data, for easy data validation by the Section Manager and the raw data package is

complete. However, when samples from several projects are processed together, the location of the calibration data must be referenced in each affected project file.

The second method provides an ongoing record of the calibration undertaken for a specific instrument, and enables easier detection of trends indicating instrument problems. However, to verify the analytical data the log must be used in conjunction with the raw data.

## 8.0 ANALYTICAL PROCEDURES

Analytical procedures should be selected by the client in consultation with regulatory agencies and ORTEK to meet the detection limits necessary. Whenever possible ORTEK uses EPA approved methods. Copies of these EPA approved methods are kept in each section by the Section Manager. ORTEK specific SOPs are in the process of being written to tailor the EPA reference method to the instrument used by ORTEK. These SOPs will be written in the format listed in Fig. 13.

### 8.1 Detection Limits

ORTEK defines the detection limit of a method as the quantity of analyte which results from the lowest differential between a signal caused by the analyte and that of random noise. Practical Quantitation Limits (PQLs) are defined as 5-10 times this signal. Metals instrument detection limits (IDL) for DQO Level D analyses by CLP protocols are determined quarterly by spiking distilled water at a concentration 3-5 times the anticipated IDL. This solution is analyzed 7 times on three nonconsecutive days and the standard deviation calculated. The IDL is determined as 3 times this standard deviation. PQLs for organic analytes are determined statistically at least annually for methods listed in Table 7 using the criteria contained in Federal Register Vol.49, No. 209, October 26, 1984, Appendix B to Part 136. For SW846 metals analyses, values above the method detection limit (MDL) will be reported. MDLS are determined from 7 low level digested distilled water spikes.

Organic analytes present in concentrations below PQL's WILL NOT be reported as present in the sample when using this analytical technique. A detection limit quantity is reported as a "less than" value(<) or "U" value. This less than or "U" value does not indicate that an analyte is not present in a sample but only that its presence is at levels below PQL. For results produced by US EPA CLP organic methods, values which are below required detection limits, but can still be quantified, are reported as estimated concentrations using a "J" qualifier. For results produced by US EPA CLP inorganic methods, values above the IDL but below the contract required detection limit (CRDL) are reported with a "B" qualifier. Values below the IDL are qualified with a "U" code.

Typical PQLs are available as an Appendix. Actual limits achievable in "real" world samples vary based on dilution requirements, background interferences, sample concentration factors and cleanup techniques. Data from studies are reviewed by the QA Officer and are kept in each section by the Section Manager.

TABLE 7

ORTEK  
ANALYTICAL METHOD CAPABILITIES

<u>WET CHEMISTRY</u>			<u>METALS</u>		
Analyte	Reference Methods		Analyte	Reference Methods	
Alkalinity	310.1		Aluminum	CLP	6010
Ammonia	350.2		Antimony	CLP 204.2	7041 6010
BOD	405		Arsenic	CLP 206.2	7060 6010
COD	410		Barium	CLP	6010
Chloride	325.1		Beryllium	CLP	6010
Conductivity	120.1		Cadmium	CLP 213.2	7131 6010
Fecal Coliform	909C		Calcium	CLP	6010
Total Coliform	Colilert		Chromium, total	CLP 218.2	7191 6010
Cyanide	335.2	9010	Chromium, hex		7196
Flashpoint	1010		Cobalt	CLP	6010
Fluoride	340.2		Copper	CLP 220.2	200.7 6010
Hardness	130.2		Iron	CLP	6010
Total Kjeldahl			Lead	CLP 239.2	7421 6010
Nitrogen	351.3		Magnesium	CLP	6010
Nitrate -N	325.1		Manganese	CLP	6010
Nitrite -N	354.1		Mercury	CLP 245.1	7470 7471
Nitrate &			Molybdenum		6010
*Nitrite -N	353.3		Nickel	CLP	6010
pH	150.1	9045	Potassium	CLP	6010
Total Phenol	420.2		Selenium	CLP 270.2	7740 6010
Oil & Grease	413.1	9071	Silver	CLP 270.2	6010
Total Phosphorus	365.4		Sodium	CLP	6010
TDS	160.1		Thallium	CLP 279.2	7841 6010
TS	160.3		Vanadium	CLP	6010
TSS	160.2		Zinc	CLP	6010
TVS	160.4		TCLP Extraction		1311
Sulfate	375.2		SPLP Extraction		1312 3005
Sulfide	376.1	9030	Metals Digestion	3050	3020 3005
TCLP Extraction		1311			
SPLP Extraction		1312			

ORGANIC CHEMISTRY

Analyte	Reference Methods				
Volatile Organics	CLP 8240	624	5030	8021	8260
Semivolatile Organics	CLP 8270	625			
Pesticides/PCB's	CLP 8080	608			
Halogenated Volatiles	8010	601			
Aromatic Volatiles	8020	602			
Chlorinated Herbicides	8150				
Polynuclear Aromatic Hydrocarbons		610	8310		
TRPH	418.1				
TPH-Gasoline(purge & trap)	California DHS				
TPH-Diesel(extractable)	California DHS				
ZHE Extraction	1311				
Aqueous Sample Extraction	3510	3520			
Solid Sample Extraction	3550				
Sample Clean-up	3610	3620	3630	3640	3660



REFERENCES TO TABLE 7

References

- 909 C: Standard Methods for the Examination of Water and Waste water, 16th edition.
- 100-300 series: Methods for Chemical Analysis of Water & Wastes, EPA-600/4-79-020
- 1000-8000 series: Test Methods for Evaluating Solid Waste, 3rd edition.
- CLP: US EPA Contract Laboratory Program Statement of Work Inorganics 7/88, 3/90 or 1/91 US EPA Contract Laboratory Program Statement of Work-organics 2/88, 3/90 or 1/91.

## 8.2 Variance From Analytical Methods/ORTEK SOPs

Analyses will be performed in accordance with the methods cited in Table 7 unless specific project/client requirements dictate an alternate method or modification of the cited methods. The alternate method must be documented in accordance with Figure 13 in an ORTEK Laboratory Operations SOP.

If an existing SOP needs modification, the analyst will prepare a memo to the QA Officer stating what changes are prepared and the justification for change. The Section Manager and QA Officer must review and approve these changes prior to implementation. If the changes are determined by the QA Officer to be substantive, the EPA or other affected regulatory agency will be contacted for approval prior to implementation.

## FIGURE 13

### FORMAT FOR ORTEK STANDARD OPERATING PROCEDURE SOP

#### Laboratory Method

Title (include reference to EPA or other approved method number)

1. Scope and Application
  - 1.1 Analytes
  - 1.2 Detection limit (instrument and method)
  - 1.3 Applicable matrices
  - 1.4 Working linear range
  - 1.5 Approximate analytical time (i.e., 5 minutes, 2 days) and throughput (# samples/shift)
2. Summary of Method

Generic description of method and chemistry
3. Comments
  - 3.1 Interferences/corrective action
  - 3.2 Helpful hints
4. Safety Issues
5. Sample Collection, Preservation, Containers, and Holding Times

minimum sample volume necessary for analysis sample storage storage location and disposal concerns
6. Apparatus

instrument and operating parameters, instrument logbook format
7. Reagents and Standards

Shelf life, source, disposal-
8. Procedure (detailed step-by-step)
  - 8.1 Sample preparation
  - 8.2 Calibration
  - 8.3 Analysis
  - 8.4 Documentationlogbook format, any bench forms used
9. QA/QC Requirements
  - 9.1 QC samples what kind, when, how prepared
  - 9.2 Acceptance criteria
  - 9.3 Corrective action required
  - 9.4 QC checklist
10. Calculations

examples, forms used
11. Reporting
  - 11.1 Reporting units
  - 11.2 Reporting limits
  - 11.3 Significant figures and reporting values below detection limits.
  - 11.4 LIMS data entry
  - 11.5 Data package contents/list
12. References
  - 12.1 Method source
  - 12.2 Deviations from reference method and rationale
13. Method Detection Limit Data and Protocol

## 9.0 DATA REDUCTION, VALIDATION & REPORTING

Data reduction is the process of compiling all pertinent results, calibration records, and QC data, and producing a report to the client that is accurate and meets his requirements. Data validation is the process of reviewing data generated against a pre-established set of criteria to determine its validity. Data reporting is the process of producing the results in a format suitable to the client and ensuring that it accurately represents the results of the reduction and validation processes. The inter-relationship of these activities is presented in Figure 14.

### 9.1 Data Reduction

The ORTEK laboratory uses the Telecation Smartlab® computerized Laboratory Information Management System (LIMS) to accomplish several data acquisition activities: laboratory sample log-in, sample result archival, sample status & tracking, and final report generation. This system is summarized below:

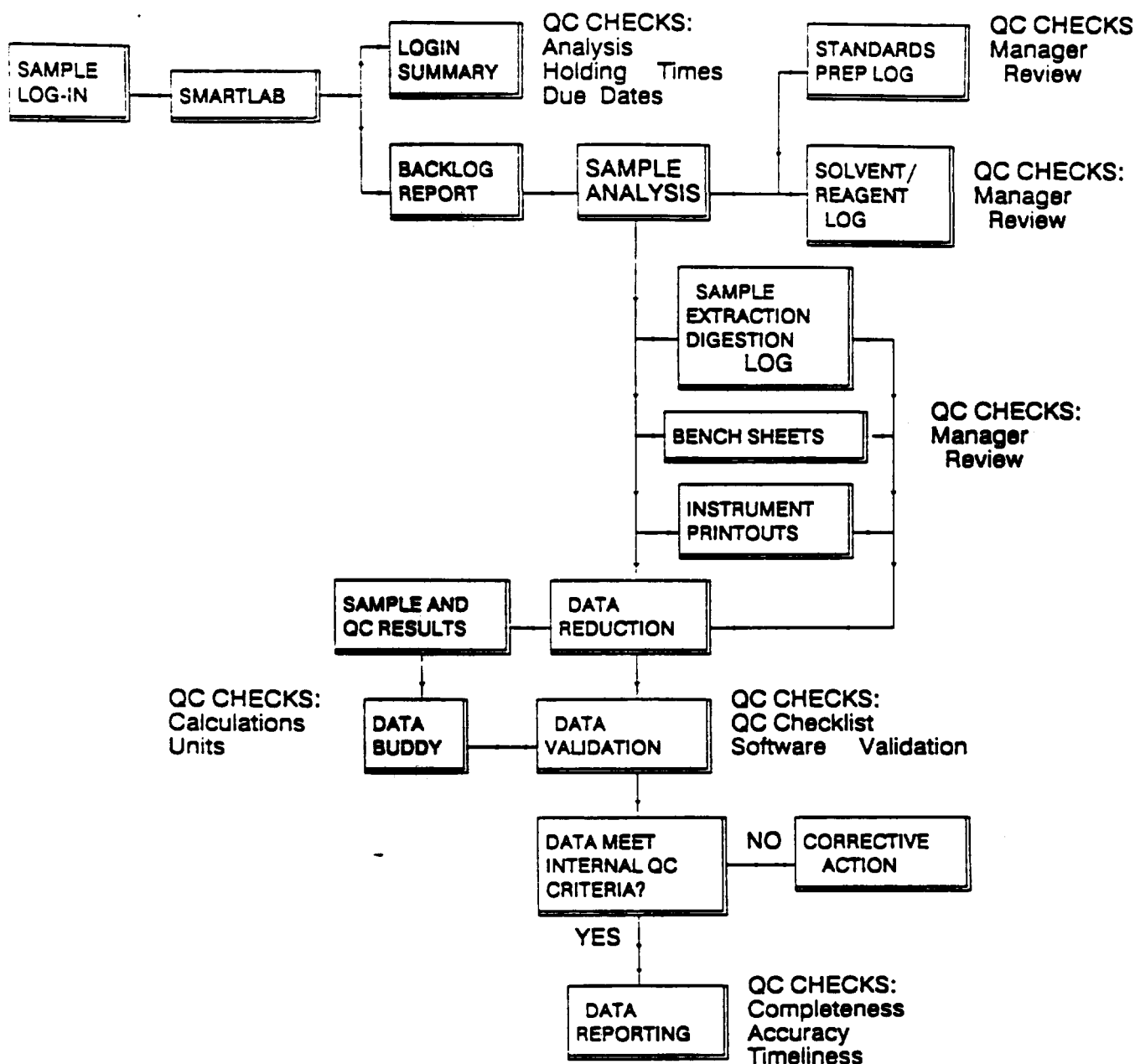
- Smartlab® assigns individual laboratory identification numbers and prints labels for each sample. Sample data input includes client sample ID, analytical test methods required, matrix, turnaround time, collection date and holding time requirements.
- Smartlab® assimilates the sample data and generates backlog reports for each section of the laboratory for scheduling & prioritizing analyses. These reports identify the analytical parameters, the method, the turnaround time requested and critical holding time considerations.
- Analysts or data entry person enter their completed sample analytical results into Smartlab®. The section manager reviews the run and if data are acceptable, approves the run. Approval of the run removes the sample analyses from the backlog as completed and a final report is generated.
- CLP data package forms are generated through independent software system. When the entire CLP Sample Delivery Group (SDG) is complete it is removed from the LIMS backlog.

#### 9.1.1 Raw Data Generation

All analytical data are generated either by computer data reduction systems (GC, GC/MS, ICAP, AA) or by manual calculation (Hg, Wet Chemistry). Manually calculated data are entered into spiral bound logbooks, and into Smartlab®. All extractions, sample preparation, standards preparation and instrument runs are also entered

# FIGURE 14

## LABORATORY DATA PROCESSING FLOW CHART



into bound logbooks. Copies of these pages related to each project are sent with the data for review for QC level D. Each set of analytical data is therefore traceable to specific lots of standards, digestion or extraction dates and instrument runs. Data are generated by the analyst in one of the following ways:

- By manual computation of results directly on a data sheet or on calculation pages attached to the data sheets.
- By entering raw data into the computer for processing.
- By direct acquisition and processing of raw data by the computer.

If data are manually generated by the analyst, all steps in the computation will be specified, including equations used and the source of input parameters such as response factors, dilution factors, and sample weights/volumes. The analyst will sign and date in ink each page of calculations.

If data are directly acquired by the computer from the instrument and a printout is supplied, the analyst will verify that the following can be traced to the raw data: calibration results, response factors, QC sample results and numerical values used for detection limits. Units and correct sample numbers must be checked.

Each section of the laboratory uses a checklist format to verify that all applicable dates & QC were analyzed. These checklists are presented in Figures 15 - 18. Each SOP laboratory method is to be consulted for the applicable QC limits, the calculations/equations to be used, the appropriate number of significant figures and the correct reporting units.

#### 9.1.2 Raw Data Verification

A "data buddy" system allows for the review of calculations done by each analyst by an independent analyst. This check is to include the math, checking the dilution factors against the final result and verifying that proper units are reported. SOP OP-17 details the procedure to be used.

FIGURE 15  
**ORTEK**

WET CHEM STANDARD QC CHECK LIST

1) ORTEK BATCH #: \_\_\_\_\_ 2) CLIENT: \_\_\_\_\_  
3) # OF SAMPLES: \_\_\_\_\_ WATER \_\_\_\_\_ SOIL \_\_\_\_\_ OTHERS  
4) LAB #'S \_\_\_\_\_

5) MET HOLD TIME: ☐ YES ☐ NO

6) PARAMETER: \_\_\_\_\_

7) DATE ANALYZED: \_\_\_\_\_

8) QC SUMMARY:

A) CHAIN OF CUSTODY CHECKED ☐

B) INITIAL CALIBRATION DATE [   /   / 91]

C) DAILY CALIBRATION [   /   / 91] ☐ PASSED ☐ NOT REQUIRE

D) LABORATORY BLANK ☐ < MDL BLANK CORRECTION ☐

E) SPIKE RECOVERY \_\_\_\_\_ % ☐ PASSE

F) DUPLICATE(% ERROR) \_\_\_\_\_ ☐ PASSE

9) CASE NARRATIVE:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

ANALYST \_\_\_\_\_ DATE \_\_\_\_\_

APPROVED BY SUPERVISOR: \_\_\_\_\_ DATE \_\_\_\_\_

## ORTEK - AA QC CHECK LIST

1) ORTEK BLANK # \_\_\_\_\_ 2) METHOD \_\_\_\_\_ 3) # SAMPLES \_\_\_\_\_ WATER \_\_\_\_\_ SOIL \_\_\_\_\_ OTHER \_\_\_\_\_

4) MET HOLD TIME ☐ YES ☐ NO 5) DATE ANALYZED \_\_\_\_\_ 6) INITIALS \_\_\_\_\_

6) QC SUMMARY:

	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Hg	Ni	K	Se	Ag	Na	Tl	V	Zn
STD PREPARED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICV PASSED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CAL PASSED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICB PASSED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P B PASSED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPIKE PASSED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DUP. PASSED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LCS PASSED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICSA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICSAB	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BS/BSD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ SAME BATCH ☐ BATCH # \_\_\_\_\_ ☐ NOT REQUIRED

MAN.S. PASSED ☐

☐ SAME BATCH ☐ BATCH # \_\_\_\_\_ ☐ NOT REQUIRED

CASE NARRATIVE : \_\_\_\_\_

ANALYST SIGNATURE \_\_\_\_\_ DATE: \_\_\_\_\_



FIGURE 17

ORTEK

QC QC CHECK LIST

- 1) ORTEK BATCH # \_\_\_\_\_ 2) CLIENT \_\_\_\_\_
- 3) # SAMPLES: \_\_\_\_\_ WATER \_\_\_\_\_ SOIL \_\_\_\_\_ OTHERS \_\_\_\_\_
- 4) DATE RECEIVED \_\_\_\_\_ MET HOLDING TIME: ☐ YES ☐ NO
- 5) METHOD \_\_\_\_\_ 6) DATE ANALYZED \_\_\_\_\_
- 7) QC SUMMARY:
  - A) CHAIN OF CUSTODY CHECKED ☐
  - B) INITIAL CALIBRATION DATE ☐ / ☐ / 90]
  - C) DAILY CALIBRATION ☐ / ☐ / 90] ☐ PASSED
  - D) LABORATORY BLANK ☐ < MDL
  - E) SURROGATE RECOVERY \_\_\_\_\_ ☐ PASSED
  - F) SPIKE RECOVERY \_\_\_\_\_ ☐ PASSED
  - G) BS/BSD ANALYZED FROM
    - ☐ SAME BATCH ☐ BATCH \_\_\_\_\_ ☐ NOT REQUIRED
  - H) MS/MSD ANALYZED FROM
    - ☐ SAME BATCH ☐ BATCH \_\_\_\_\_ ☐ NOT REQUIRED
  - I) LIMS CHECKED AGAINST COMPUTER PRINT OUT ☐

8) CASE NARRATIVE:

---



---



---

ANALYST \_\_\_\_\_ DATE: \_\_\_\_\_  
 =====

APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

FIGURE 18

## GC-MS QC CHECK LIST

BATCH # \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE RECEIVED \_\_\_\_\_

METHOD \_\_\_\_\_ INSTRUMENT ID \_\_\_\_\_ LIMS RUN # \_\_\_\_\_

: SAMPLES: \_\_\_\_\_ WATER \_\_\_\_\_ SOIL \_\_\_\_\_ TCLP \_\_\_\_\_ OTHER \_\_\_\_\_

YES NO N/R

[ ] [ ] CHAIN-OF-CUSTODY CHECKED

[ ] [ ] HOLD TIMES MET

[ ] [ ] [ ] EXTRACTION

[ ] [ ] ANALYSIS

INITIAL CALIBRATION

[ ] [ ] 1st IC \_\_\_\_/\_\_\_\_/91 [ ] SAME BATCH [ ] OTHER \_\_\_\_\_

[ ] [ ] 2nd IC \_\_\_\_/\_\_\_\_/91 [ ] SAME BATCH [ ] OTHER \_\_\_\_\_

DAILY CALIBRATIONS (Including BFB or DFTPP)

[ ] [ ] 1st CAL \_\_\_\_/\_\_\_\_/91 [ ] SAME BATCH [ ] OTHER \_\_\_\_\_

[ ] [ ] 2nd CAL \_\_\_\_/\_\_\_\_/91 [ ] SAME BATCH [ ] OTHER \_\_\_\_\_

[ ] [ ] 3rd CAL \_\_\_\_/\_\_\_\_/91 [ ] SAME BATCH [ ] OTHER \_\_\_\_\_

[ ] [ ] 4th CAL \_\_\_\_/\_\_\_\_/91 [ ] SAME BATCH [ ] OTHER \_\_\_\_\_

DAILY BLANKS PASS

[ ] [ ] 1st BLANK \_\_\_\_/\_\_\_\_/91 [ ] SAME BATCH [ ] OTHER \_\_\_\_\_

[ ] [ ] 2nd BLANK \_\_\_\_/\_\_\_\_/91 [ ] SAME BATCH [ ] OTHER \_\_\_\_\_

[ ] [ ] 3rd BLANK \_\_\_\_/\_\_\_\_/91 [ ] SAME BATCH [ ] OTHER \_\_\_\_\_

[ ] [ ] 4th BLANK \_\_\_\_/\_\_\_\_/91 [ ] SAME BATCH [ ] OTHER \_\_\_\_\_

INTERNAL STANDARD AREAS PASS (If no explain below)

[ ] [ ] SURROGATES PASS (If no explain below)

[ ] [ ] [ ] BS/BSD PASS [ ] SAME BATCH [ ] OTHER \_\_\_\_\_

[ ] [ ] [ ] MS/MSD PASS [ ] SAME BATCH [ ] OTHER \_\_\_\_\_

[ ] [ ] [ ] CONTROL CHARTS PLOTTED

DRAFT

CASE NARRATIVE ITEMS:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

ANALYST: \_\_\_\_\_

DATE \_\_\_\_\_

DATA BUDDY: \_\_\_\_\_

DATE \_\_\_\_\_

APPROVED BY: \_\_\_\_\_

DATE \_\_\_\_\_

## 9.2 Data Validation

ORTEK data are validated during collection and after generation by a series of steps that minimizes the possibility of reporting results that do not meet client DQOs. These steps include assuring all software used is accurate, the instrument is properly calibrated and the method used is not biased.

### 9.2.1 Software

As computer software is used to acquire, process and report data, periodic demonstration that it is operating correctly is required. This consists of comparing its performance against known results. SOP OP-15 details how specifically this will be accomplished, and a summary is described below:

If the program has been prepared external to ORTEK and is accepted by regulatory agencies as an "industry standard," independent verification is not required. However, when the program is first used on an ORTEK system, available example problems must be processed to demonstrate that the program is fully operational. Example problems must test the capabilities of the software. Industry standard programs are defined as those which are widely used throughout the environmental lab community (i.e. Formaster, Smartlab®) and are brought into ORTEK and used without modification.

For programs that are developed within ORTEK and externally prepared programs that are modified by ORTEK, complete checking of performance is required. Checking is dependent upon the function of the software and could include:

- For software that only performs numerical manipulation, sample sets of numbers for which the results are known must be processed and compared. In this case, known results are usually generated by performing hand calculations using the same equations and procedures as the software. Verification of the software must test all options of the program. Problems must test both the theory, or basis for computation and the ability of the software to store and manage files.

- Software that performs as part of instrument operation should be verified by processing reference materials through the instrument system. Processed instrument response should be compared against the standards used.

Software will be verified whenever modification is made. The test problems used to provide initial verification will be reprocessed and the results compared to demonstrate that performance of the software is unchanged. If software performance has changed, the effect of the change upon intended function and since last verification will be assessed. Effect must be determined on a case-by-case basis for the scope and impact of incorrectly reported results. If necessary, the data will be reprocessed and recipients of affected data reports notified.

Software verification shall be documented by the individual performing the work, signing and dating in ink the computer output, and supporting calculations. If test problems are used, the input will be marked with check marks to indicate correct usage and the output checked to indicate acceptable comparison. If reference materials are used as the basis for verifying instrumental related software, the "true" values or certificates will be included with the output.

#### 9.2.2 Instrument Calibration

All instruments used in the generation of analytical results must be properly calibrated in accordance with the SOP as summarized in Section 7.0. No sample data can be generated on an instrument until the requirements for initial calibration are fulfilled (i.e. correlation coefficient RRF, %RSD). Calibration results must be reviewed and approved by the Section Manager as indicated by his signature on the QC checklist.

#### 9.2.3 Analytical Method Assessment

The QC checklist items used to validate data that are related, to how valid the methods performed are: lab method and holding blank results, blank spike (BS)/blank spike duplicate (BSD) recoveries, and laboratory control standard recoveries. The results of these QC checks are not dependent on sample matrix interferences and must be within acceptance

limits listed in Section 10 in order for the analysis to be considered valid.

Field blank and trip blank results, surrogate spike recoveries, matrix spike/matrix spike duplicate recoveries and field or lab duplicate RPD are all sample collection or matrix dependent and do not necessarily indicate if the data was generated by a valid method on a properly calibrated instrument. Results out of acceptance limits are noted on the data result sheet or case narrative to alert the client of a possible sample collection or matrix problem.

Figure 19 presents the order of data validation and the actions required. All QC data are then reviewed by the Section Manager to ensure that the proper number, type of QC samples and appropriate limits were used. The Section Manager indicates his review by signature of the QC checklist. In addition, 10% of the project files generated each month are reviewed by the QA Officer to assess if the data validation process is being followed.

### 9.3 Data Reporting

The format and content of a data report are dependent upon project needs, such as whether or not a CLP data package, case narrative, or QA Summary is required, client or contract requirements, and government reporting formats. ORTEK is flexible and does not specify a report format, but all reports must meet the requirements in SOP OP-10 which are summarized below:

- Data are presented in tables whenever possible.

- All result sheets and/or a cover letter/case narrative are signed by the Laboratory Director or Assistant Laboratory Director. This signature indicates that he has reviewed the data for:

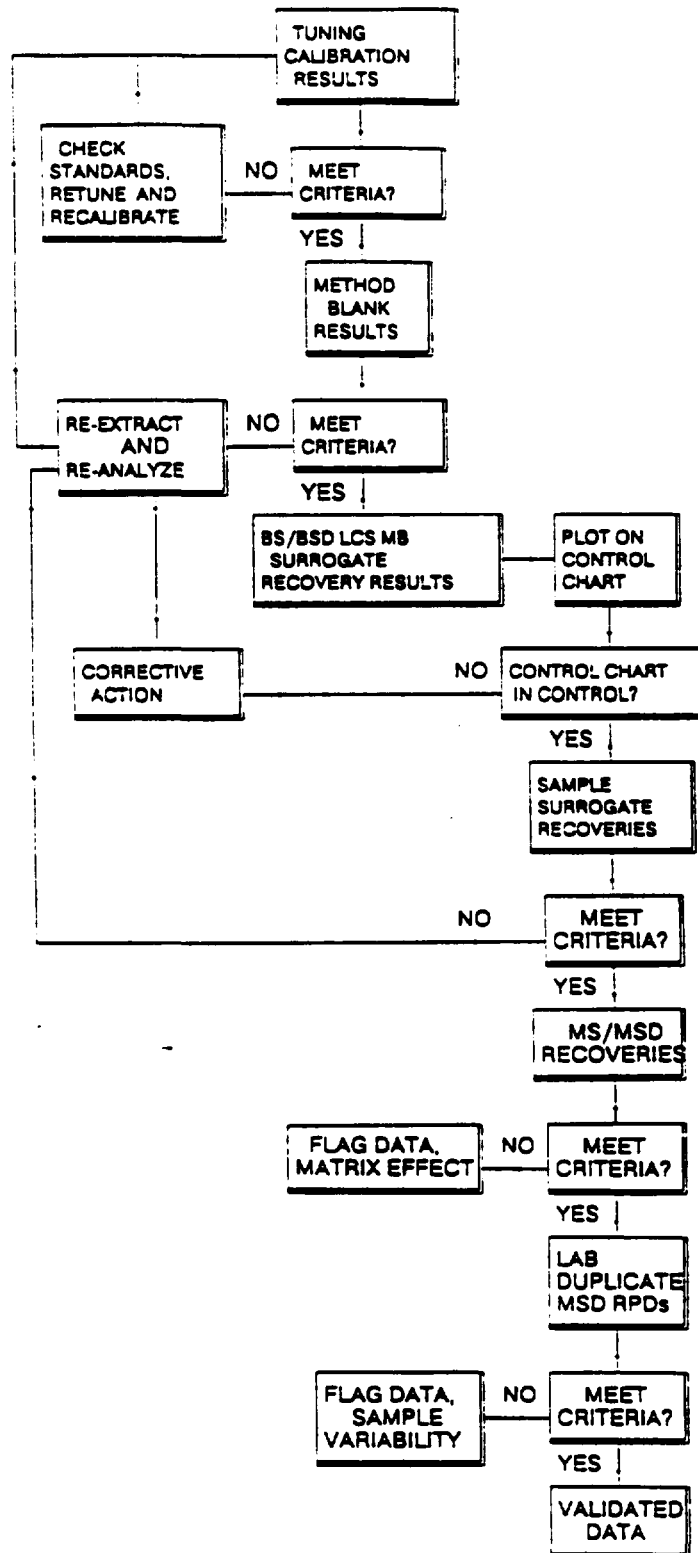
- Completeness - results for all parameters requested are present; detection limits, units, dates, and sample descriptions are complete and correct.

- Consistency - all parameters are reviewed for internal consistency (hexavalent chromium  $\leq$  total chromium, TKN  $\geq$  NH<sub>3</sub>-N, TS  $\geq$  TSS, total metals  $\geq$  dissolved metals).

- Sample identification number used by ORTEK and the sample identification provided to the laboratory by the client.

FIGURE 19

DATA VALIDATION PROCESS FLOW



- Chemical parameters analyzed, reported values, units of measurement, and analytical method used for the types of analysis specified (if requested by client).
- Detection limit of the analytical procedure if less than the detection limit is reported.
- Data for a chemical parameter reported with consistent significant figures.
- Results of Quality Control sample analyses if requested.
- Explanation of any out-of-control events that affect data quality (holding times, preservatives, surrogates).
- Explanation of any data qualifiers used such as "B" denotes an organic contaminant that is common to both the lab blank and the sample, while "J" denotes the presence of a compound, but at a level less than the detection limit.

Any results faxed to clients or verbally transmitted are considered preliminary until a formal hard copy is received. Fax transmittal sheets and telephone conversation records, regarding transmittal of results, must be kept in the project file.

## 10.0 INTERNAL QC CHECKS AND FREQUENCY

This section describes the types of QC samples which are prepared by ORTEK and routinely analyzed with client samples to demonstrate that ORTEK is operating within known precision and accuracy, representativeness, completeness and comparability limits. Table 8 summarizes these QC samples and indicates their frequencies, limits and applicabilities. Client supplied QC checks (field blanks, rinsate blanks, field duplicates, splits, collocated samples) are not included.

### 10.1 Precision QC Samples

Precision is defined as the reproducibility of analytical measurements. It is a quantitative measure of the variability of a group of measurements compared to their average value, and is dependent on sampling and analytical error.

#### 10.1.1 Lab Duplicate (LD)

A sample is split by ORTEK and both aliquots are analyzed separately to assess method precision. The relative percent difference (RPD) is calculated. Metals and wet chemistry sections use this QC sample.

Frequency: One per 20 samples or daily, whichever is more frequent.

Limits: Less than 20% RPD water, less than 20% RPD soil.

#### 10.1.2 Blank Spike Duplicate (BSD)

This sample is prepared as in 10.2.7. The RPD is calculated between the Blank Spike (BS)/BSD pair. If the variability between the BS/BSD exceeds limits, the analytical system is out of control and too unstable to provide valid sample data. Any associated "real" samples must be reextracted and reanalyzed.

Frequency: One per 20 samples or daily whichever is more frequent.

Limits: Less than 20% RPD.



Table 8	INTERNAL QC CHECKS & FREQUENCY											
ANALYTE	BLANKS				DUPLICATES & SPIKES						CONTROL STANDARD	
	TB	ZZZ	PS	MB*	LD	BS/BSD	MS/MSD	MS	SS	AS	IS	LCS
ALKALINITY	--	--	-	1/10	1/10	1/20	--	--	--	--	--	1/10
AMMONIA	--	--	P	1/10	1/10	1/20	--	1/10	--	--	--	1/10
BOD	--	--	--	DAILY	1/10	1/20	--	--	--	--	--	1/10
COD	--	--	P	1/10	1/10	1/20	--	1/10	--	--	--	1/10
CHLORIDE	--	--	--	1/10	1/10	1/20	--	1/10	--	--	--	1/10
CONDUCTIVITY	--	--	--	1/10	1/10	--	--	--	--	--	--	1/10
COLIFORM	--	--	--	1/10	1/10	--	--	--	--	--	--	--
CYANIDE	--	--	P	1/10	1/10	1/20	--	1/10	--	--	--	1/10
FLASHPOINT	--	--	--	--	1/10	--	--	1/10	--	--	--	1/10
FLUORIDE	--	--	--	1/10	1/10	1/20	--	1/10	--	--	--	1/10
HARDNESS	--	--	--	1/10	1/10	1/20	--	1/10	--	--	--	1/10
KJELDAHL NITROGEN	--	--	P	1/10	1/10	1/20	--	1/10	--	--	--	1/10
NITRATE-N	--	--	P	1/10	1/10	1/20	--	1/10	--	--	--	1/10
NITRITE-N	--	--	P	1/10	1/10	1/20	--	1/10	--	--	--	1/10
NITRATE AND NITRITE	--	--	--	1/10	1/10	1/20	--	1/10	--	--	--	1/10
PH	--	--	--	--	1/10	--	--	--	--	--	--	1/10
PHENOL, TOTAL	--	--	P	1/10	1/10	1/20	--	1/10	--	--	--	1/10
OIL & GREASE	--	--	P	1/10	1/10	1/20	--	1/10	--	--	--	1/10

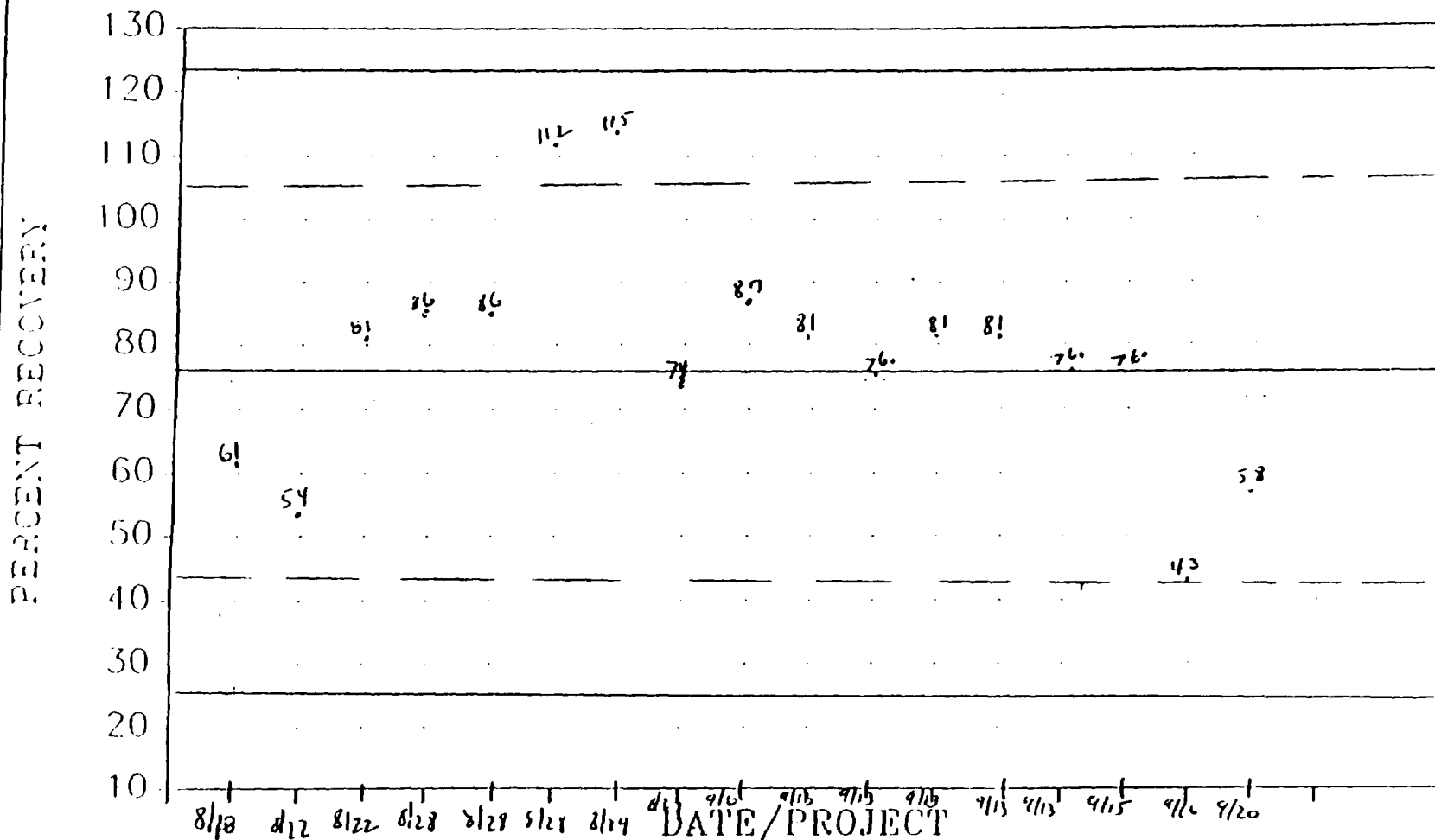
	TB	ZZZ	PS	MB*	LD	BS/B SD	MS/MSD	MS	SS	AS	IS	LCS
TOTAL PHOSPHORUS	--	--	P	1/10	1/10	1/20	--	1/10	--	--	--	1/10
TDS	--	--	--	1/10	1/10	--	--	--	--	--	--	--
TS	--	--	--	--	1/10	--	--	--	--	--	--	--
TSS	--	--	--	1/10	1/10	--	--	--	--	--	--	--
TVS	--	--	--	1/10	1/10	--	--	--	--	--	--	--
SULFATE	--	--	--	1/10	1/10	1/20	--	1/10	--	--	--	1/10
SULFIDE	--	--	--	1/10	1/10	1/20	--	--	--	--	--	1/10
TAL METALS	--	--	P	1/20	1/20	1/20 BS only	--	1/20	--	100 %	--	1/20
TCLP METALS	--	--	P	1/20	1/20	1/20	--	1/20	--	--	--	1/10
TRPH	--	--	PS	1/10	1/10	1/20	--	1/10	--	--	--	1/10
TCL VOLATILE	1/C	1/C	PS	1/20	--	1/20	1/20	--	100%	--	100%	--
TCL SEMIVOLATILES	--	--	S	1/20	--	--	1/20	--	100%	--	100%	--
TCL PCB/PESTICIDE	--	--	S	1/20	--	1/20	1/20	--	100%	--	--	--
GC VOLATILES	1/C	1/C	PS	1/20	--	--	1/20	--	100%	--	--	--
TPH - GRO	--	--	--	1/20	--	--	1/20	--	--	--	--	--
TPH - DRO	--	--	S	1/20	--	1/20	--	--	--	--	--	--
HERBICIDES	--	--	S	1/20	--	1/20	--	--	--	--	--	--
THE VOLATILES	1/C	1/C	--	1/20	--	--	1/20	--	--	--	100%	--
TCLP SEMIVOLATILE	--	--	S	1/20	--	--	--	1/20	100%	--	100%	--
TCLP PESTICIDES	--	--	S	1/20	--	--	--	1/20	100%	--	--	--
TCLP HERBICIDES	--	--	S	20	--	--	--	1/20	--	--	--	--

TABLE 8 LEGEND

TB	TRIP BLANK
1/C	ONE PER COOLER RECEIVED
ZZZ	HOLDING BLANK
P	PRESERVATIVE CHECK
S	SOLVENT QC CHECK
MB	METHOD BLANK
LD	LAB DUPLICATE
BS/BSD	BLANK SPIKE/BLANK SPIKE DUPLICATE
MS/MSD	MATRIX SPIKE/MATRIX SPIKE DUPLICATE
MS	MATRIX SPIKE
SS	SURROGATE SPIKE(S) ADDED
AS	ANALYTICAL SPIKE (POST DIGEST)
IS	INTERNAL STANDARDS ADDED
LCS	LAB CONTROL STANDARD OR EPA REFERENCE STANDARD
* OR AT LEAST DAILY, WHICHEVER IS MORE FREQUENT	
100% = EVERY SAMPLE SPIKED	

FIGURE 10

# 2-FLUOROPHENOL SOIL METHOD BLANK SPIKE RECOVERY



+ LCI 26    x MEAN 75    □ UCL 124  
LWL 42                      UWL 107

limits calculated  
10/14/91

dates listed are extraction dates, previous charts listed injection dates

### 10.1.3 Matrix Spike Duplicate (MSD)

The matrix spike duplicate is prepared as in Section 10.2.8 and the RPD calculated between the MS/MSD pair. If the variability between the MS/MSD exceeds limits, the associated sample data case narrative or report sheet shall contain a note to this effect.

Frequency: One per 20 samples of a similar matrix.

Limits: method and matrix dependent.

## 10.2 Accuracy QC Samples

Accuracy is defined as the bias of analytical measurements. Sources of bias are the sampling process, field contamination, sample preservation, handling, sample matrix, laboratory sample preparation, and analysis.

### 10.2.1 Trip Blanks (TB)

Volatile organics samples are susceptible to contamination by diffusion of contaminants through the teflon septum of the sample vial. Trip blanks are prepared by ORTEK in accordance with SOP OP-19, are shipped with the coolers to the client, and are analyzed to monitor possible sample contamination during shipment. Trip blanks accompany the sample bottles through collection and shipment to the laboratory and are stored with the samples. If the trip blanks indicate contamination, the client may decide to correct data for the trip blank concentration or re-sample. Results of trip blank analyses are reported with the corresponding sample analytical data.

Frequency: Two 40 ml. volatile vials per cooler containing volatile samples, analyze one.

Limits: Check if holding and lab blanks also contain same analytes, report results.

### 10.2.2 Field Blanks (FB)

A field blank is "pure" water or soil used to demonstrate the absence of contamination during sampling. Deionized, distilled laboratory water, or Ottawa sand supplied by ORTEK on request is placed into sample

containers by the client, packaged, and shipped with the other field samples. If the field blanks indicate possible contamination of the samples depending upon the nature and extent of the contamination, the client may decide to correct sample data for the field blank concentration or resample. Sources of contamination may include: Containers; sample storage facilities; field handling procedures; and sampling equipment. Results are reported with the corresponding sample analytical data.

Frequency: One per 10 field samples or daily recommended by EPA.

Limits: Not applicable, report results.

#### 10.2.3 Rinsate Blanks (RB)

A rinsate blank is a volume of rinse solution (deionized, distilled lab water or organic solvent) used to rinse a sampling tool which contacts multiple samples. The rinse solution is collected by the client after the tool has collected a sample and has been cleaned, to demonstrate that there is no residual contamination on the tool to carry over into the next sample. If the rinsate blank indicates possible contamination of the succeeding samples, the client may decide to correct data for the rinsate blank concentration or resample. Results of rinsate blank analyses are reported with the corresponding sample analytical data.

Frequency: One per 10 field samples or daily recommended by EPA.

Limits: Not applicable, report results.

#### 10.2.4 Method Blanks (MB)

A method blank is a volume of deionized, distilled laboratory water for water samples, or Ottawa sand for soil/sediment samples carried through the entire analytical procedure. The volume or weight of the blank must be approximately equal to the sample volume or sample weight processed. If the concentration of an analyte in the blank is above the CLP CRDL or MDL, the sample with the least concentration analyte must be greater than

10 times the blank concentration, or all samples associated with the blank and less than 10 times the blank concentration must be redigested, reextracted and reanalyzed. No sample values will be corrected for the blank value. Analysis of the blank verifies that method interferences caused by contaminants in solvents, reagents, glassware, and other sample processing hardware are known and minimal.

Results of method blanks are reported with the data for volatile organics analyses, and kept in the project file for other analyses.

Frequency: One per 20 samples analyzed or daily, whichever is more frequent.

Limits: Less than detection limit or less than 10 x lowest detected sample level for inorganic analytes (Phthalates, methylene chloride, and acetone).

#### 10.2.5 Preservative or Solvent Blank (PS)

This blank consists of the chemical(s) added to the client samples during preservation or extraction. It is prepared and analyzed in accordance with SOP OP-20. Detection of analytes necessitates rejection of the lot.

Frequency: One per each set aside lot of chemical.

Limits: Less than detection limit.

#### 10.2.6 Holding Blanks (ZZZ)

Holding blanks are laboratory precleaned sample containers filled with laboratory distilled water and stored with client samples. Results of the analytes are kept by the sample custodian to assess storage area cleanliness. These blanks are prepared in accordance with SOP OP-18. Detection of analytes necessitates rejection of the lot of bottles.

Frequency: One per gross of bottles (144).

Limits: Less than detection limit.

10.2.7 Blank Spikes/Blank Spike Duplicate (BS/BSD)

A blank spike/blank spike duplicate is a volume of laboratory distilled water or Ottawa sand spiked with the analytes or subset of analytes of interest and analyzed using the same procedure as the samples. Recovery of the analyte(s) is plotted on a control chart. Analysis of these samples with acceptable recoveries and no out of control conditions as defined in Section 13 indicates that the laboratory method is in control and acceptable accuracy has been achieved.

Frequency: One per batch of 20 samples or daily, whichever is more frequent.

Limits: As set by SOP OP-21.

10.2.8 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

To determine the accuracy of the method in the real sample matrix, two separate aliquots of a sample are spiked with the analyte or subset of analytes of interest and analyzed with the sample. The percent recovery is calculated and compared against advisory limits cited in each SOP. If the percent recovery is outside of the limits in both samples, a matrix effect may be suspected and the report contains a note on the matrix effect. Matrix spikes only are applicable for wet chemistry and metals analyses.

Frequency: One per batch of 20 samples or daily, whichever is more frequent.

Limits: As set by SOP, variable for organics, generally 75-125% for wet chem/metals.

10.2.9 Analytical (Post Digestion Spikes) (AS)

Target metals at a known concentration are added to an aliquot of the sample digest for GFAA just prior to analysis to assess if matrix effects (suppression or enhancement) are present. If results are outside limits, the data report indicates that the sample exhibited a matrix effect. Further analysis may be required as indicated in the SOP for GFAA analysis.



For ICAP analyses, if the matrix spike fails and the concentration of the sample does not exceed four times the spike level, a post digest spike must be done at twice the indigenous level or at twice the CRDL, whichever is greater.

Frequency: Every sample for GFAA analysis (CLP protocol).

Limits: 85-115%.

#### 10.2.10 Internal Standards (IS)

A known concentration of analyte (organic) not expected in environmental samples is added to the sample extract just prior to analysis. It measures instrument performance and is used to normalize data for quantitation. Reinjection of the sample is done if results are not acceptable.

Frequency: Every real sample standard and internal QC samples.

Limits: -50 to + 100% area counts.

#### 10.2.11 Surrogate Spikes (SS)

Surrogates are organic analytes that also are not expected to be found in environmental samples and their behavior mimics those of the target analyses. All samples, blanks and internal QC samples are spiked with surrogates prior to purging or extraction for GC or GC/MS analyses. Reanalysis of samples occurs if a specified number of surrogates are outside limits.

Frequency: Every real sample, standard and internal QC sample.

Limits: As contained in SOP.

#### 10.2.12 Laboratory Control Standards (LCS)

A standard of midpoint concentration on the curve or a known EPA reference standard/sample is to be analyzed to assess the accuracy of the calibration curve and the stability of the instrument response. For metals analysis the LCS is the BS. This is in addition to the calibration requirements listed in Table 6. For CLP aqueous samples, the LCS is the digested initial calibration verification solution (ICV).

Frequency: One per 20 samples or daily,  
whichever is more frequent.

Limits: 80-120%.

### 10.3 Representativeness QC Samples

Representativeness is defined as the degree to which sample data accurately and precisely represent the environmental conditions. It is controlled by selecting proper sampling locations and collecting sufficient number of samples.

#### 10.3.1 Field Duplicate

If ORTEK is aware of the identity of the field duplicates in the project samples, an assessment of field collection and homogenization techniques and/or site variability can be made by calculating the RPD.

Frequency: One per 10 field samples collected is recommended by EPA.

Limits: Not established.

#### 10.3.2 Collocated Sample

Collocated samples are independent samples collected simultaneously at a given sample location and time. Two charcoal tubes from a common manifold or two surface water samples collected at the same time and depth are examples. These samples indicate the precision attainable over both the field collection and analytical system. Wide variability may indicate the matrix sampled is too nonhomogeneous and more points are needed to provide "representative" samples.

Frequency: One per 20 samples recommended by EPA.

Limits: Not established.

### 10.4 Completeness QC Samples

Valid data at 100% completeness is the goal of the QA program. Since no specific internal QC checks measure completeness, this goal is achieved only if the SOPs are followed for calibration, operation and analysis. Acceptable blank spike recoveries and surrogate spike recoveries will be used to approximate completeness.

## 10.5 Comparability QC Samples

Comparability is defined as the confidence with which one group of data can be compared with another. It is controlled by using standard sampling and approved EPA analytical techniques.

### 10.5.1 Split Samples

A split sample is divided into 2 portions in the field and analyzed by ORTEK and an independent laboratory using the same EPA method. Comparison of results is usually done by the client by calculating RPD.

Frequency: One per 20 samples recommended.

Limits: Client determined.

### 10.5.2 External Performance Evaluations

ORTEK participates in inter-laboratory round robin tests supplied by the US EPA. A report of the true values and acceptable statistical limits are received and are used to assess each section's performance.

Frequency: Quarterly.

Limits: EPA determined, study specific.

## 10.6 Control Charts

Control charts are a graphic tool to view the statistical performance of a method to enable early detection of out-of-control situations. Method performance is tracked by control charts only after a blind performance evaluation sample is successfully passed and when the parameter is an analyte in a NAVY/HAZWRAP project requiring control charts.

Blank spike and/or blank spike duplicate percent recoveries for each parameter listed in Table 9 are to be plotted on a Shewhart Control Chart (Figure 20). Limits are set in accordance with SOP OP-21. Analysts are responsible for plotting the points as they are generated.

TABLE 9

## CONTROL CHART PARAMETERS

Analyze Group	Matrix	Compound(s)	QC Sample Charted
Volatiles GC/MS	Soil & Water	d <sub>8</sub> toluene Bromofluorobenzene  d <sub>4</sub> -1,2-dichloroethane	Method Blank
Volatiles GC	Water & Soil	trifluorotoluene	Method Blank
Semivolatiles GC/MS	Soil & Water	2-fluorophenol 2-fluorobiphenyl d <sub>5</sub> -nitrobenzene d <sub>6</sub> -phenol d <sub>14</sub> -terphenyl 2,4,6-tribromophenol	Method Blank
PCB/Pesticides	Soil & Water	Aroclor 1248 or 1254 dieldrin 4,4'-DDT	BS/BSD
ICAP Metals	Soil & Water	Lead Cadmium Chromium	LCS
Mercury	Soil & Water	Mercury	LCS
Hexavalent Chromium	Soil & Water	Hexavalent Chromium	BS/BSD
GFAA metals	Soil & Water	Arsenic Selenium Lead Thallium	LCS
TPH-IR	Soil & Water	TPH	BS/BSD
Cyanide	Soil & Water	Cyanide	BS/BSD

Limits are initially calculated and updated after 20 points are generated by the QA Officer. Updated control charts are released to each Section Manager quarterly for distribution and posting in each affected lab area. Out of control conditions have been defined by the NEESA/HAZWRAP program as follows:

- One point outside the upper or lower limit.
- Three consecutive points outside the upper or lower warning limit.
- Eight consecutive points on one side of the centerline.
- Six consecutive points such that each one is larger or smaller than its immediate predecessor.
- Any cyclic pattern is seen over time.

Many factors lead to analytical problems that show up in control charts. The symptoms seen on control charts are either due to a shift or trend as described below:

<u>Symptom</u>	<u>Possible Causes</u>
Shift in centerline after updating	<ul style="list-style-type: none"><li>• incorrect standard preparation</li><li>• incorrect reagent preparation</li><li>• systematic contamination of system</li><li>• incorrect instrument calibration</li><li>• analyst error</li></ul>
Trend Upwards	<ul style="list-style-type: none"><li>• deterioration of standard</li><li>• deterioration of samples</li></ul>
Trend Downwards	<ul style="list-style-type: none"><li>• concentration of standard due to evaporation of solvent</li><li>• deterioration of reagents</li></ul>
Increase in variability	<ul style="list-style-type: none"><li>• analyst performance (new analysts, deviation from SOP, poor technique)</li></ul>

Once an out of control condition has been identified and documented on an Out-of-Control Form, corrective action must be taken and documented and no additional data generated until the next point is in control. Suggested corrective actions are in order of completion:

1. Check calculations
2. Check age of spiking solution
3. Make new spiking solution
4. Reanalyze affected batch
5. Check age of stock spike standard
6. Make new stock spike standard
7. Reanalyze affected batch

Control charts are included in all data packages for Navy (NEESA) and HAZWRAP projects and should be submitted in the project file to Client Services.

## 11.0 PERFORMANCE AND SYSTEMS AUDITS AND FREQUENCY

Performance audits independently collect data from the QA system using performance evaluation samples and are quantitative. Results are usually expressed as falling within or outside of statistically determined acceptance limits. System audits are the review of the entire data production process and consist of on-site inspection and a review of documentation. System audits are qualitative and consist of an audit report containing any deficiencies. Data audits consist of reviewing client project files for appropriate QC results and documentation from sample receipt through disposal. Data audits are conducted monthly on randomly selected projects or in response to data challenges from clients.

These audits are performed to:

- Determine that contractual/regulatory criteria are met.
- Determine that the ORTEK SOP's and this QA Program Manual are being followed.
- Verify that document control procedures are followed.
- Establish that DQO's are met, including that holding times and report due dates are met, approved methods and SOP's are followed, and stated frequencies and limits for precision, accuracy, representativeness, completeness and comparability are met.
- Serve as a management tool to evaluate the effectiveness and appropriateness of ORTEK's QA Program.

Results of all audits are communicated to the President, Laboratory Director, Assistant Laboratory Director and affected Section Managers by the QA Officer. Blame is not assigned, but request for investigation of any deficiencies and proposed corrective action and schedule for implementation is requested. Each Section Manager is to respond in writing, to document corrective action and avoid repeating of the same deficiency.

### 11.1 Performance Audits

The QA Officer is responsible for preparation of any internal single blind performance evaluation (PE) samples and insertion of any double blind external (PE) samples into the ORTEK analytical system.

Single blind PE samples are obtained from commercial sources such as Environmental Resource Associates and are used after an external PE has indicated deficiencies. Once corrective action has been taken

and documented by affected sections of the lab, the QA Officer will prepare full volume samples, and "dummy" up sampling documentation such as the chain-of-custody form to disguise the PE sample as a real sample. Client Services Personnel only will be aware of the identity of the "dummy" samples.

Double blind PE samples are sent to ORTEK from EPA. These samples are not disguised as real samples and are usually contained in sealed glass ampules or vials. The QA Officer does not prepare full volume samples from the PE ampules. Each section of the lab is responsible for correctly diluting and spiking samples as indicated by the directions. Double blind studies ORTEK participates in and their frequency are listed below:

U.S. EPA CLP PE Samples	Quarterly, through EPA Region Region V and EPA EMSL-LV
U.S. EPA Water Pollution Studies	Semiannually
U.S. EPA Water Supply Studies	Semiannually
Wisconsin Department of Natural Resources Recertification samples	Annually
U.S. Navy NEESA/HAZWRAP Recertification samples	Annually
U.S. Army Corps of Engineers laboratory validation PE samples	Every 18 months

### 11.2 Systems Audits

ORTEK is annually inspected by US Navy (NEESA)/HAZWRAP personnel or their contractors. Every 3 years, the Wisconsin Department of Natural Resources conducts an on site inspection. Every 18 months prior to recertification, the US Army Corps of Engineers performs an on-site evaluation. Other clients audit ORTEK on a project specific basis.

Quarterly, an internal on-site audit is conducted by the QA Officer. One section of the lab (sample receiving/Document Control, wet chemistry, metals, organics) is chosen each quarter. A predesigned checklist will be used that includes the following items as applicable:



## • Sample Operations

- Are stated temperatures for sample storage monitored?
- Are samples extracted and analyzed within prescribed holding times?
- Are samples properly logged in, stored, and disposed of?

## • Calibration

- Are calibrations performed as required?
- Are calibration records properly documented in instrument log books, or as part of project data if required?
- Do calibration results indicate a trend in instrument performance?

## • Preventive Maintenance

- Are adequate spare parts available?
- Do specific instruments have repeated maintenance problems?
- Is preventive maintenance performed and properly documented?

## • Receipt and storage of standards, chemicals, and gases

- Are all reagents, chemicals, and gases purchased for use in the laboratory of adequate grade for the intended use?
- Are certifications and QC checks done when required?
- Are they kept beyond stated shelf life?
- Are they properly prepared, stored and documented?

## • Analytical Methods

- Are the methods used appropriate for project requirements?
- Are detection limit studies available and current?
- Are alternate methods approved for use?

## • Data Verification

- Are data processed and validated as prescribed?
- Are control charts updated, with out-of-control conditions noted and corrective action documented?

## • Records Management

- Are the records of analyses complete and properly identified?
- Is chain of custody fully documented?

The QA Officer will meet with the Laboratory Director, Assistant Laboratory Director and affected Section Manager prior to beginning the audit to discuss what will be audited. At the close of the audit, the findings will be discussed with them. A corrective action plan and implementation schedule will be discussed and agreed upon if deficiencies are found. An audit report will be written by the QA Officer to include:

- Date/location of audit.
- Persons contacted in the lab, specific lab operations/records audited.
- Description of items requiring corrective action and, if possible, the means for correction.
- Due date for completion of corrective action.
- Means of verifying completion of corrective action.
- Review of the Quality Assurance Program implementation in the section.

The audit report will be issued within 10 days after completion of the audit.

The Section Manager is responsible for responding to the audit report. The response will be in writing to the QA Officer and will state the corrective action taken or the action underway. If correction can be verified, the Section Manager should attach documentation of the corrective action to the audit response. Upon receipt of the audit response, the QA Officer must verify completion of the corrective action. After this verification, the QA Officer will issue a closure statement stating that all corrective

action has been completed and the audit is closed. All audits must be closed and entered on the corrective Action Log.

### 11.3 Data Audits

Data audits are done monthly by the QA Officer to address the precision, accuracy, representativeness, and completeness of the data. Projects are selected at random or as requested by clients through verbal data challenges or written data verification requests. A memo is written by the QA Officer that details the findings. The Laboratory Director, Assistant Laboratory Director, and Section Managers are to respond to deficiencies as requested.

### 11.4 ORTEK Certifications

The following certifications have been obtained by ORTEK:

- Wisconsin Department of Natural Resources
- U.S. Department of Energy, HAZWRAP Program
- U.S. Navy NEESA Installation Restoration Program (Pending)
- U.S. Army Corps of Engineers, Missouri River Division for DERA/DERP sites
- 8(a) Program, US Small Business Administration
- Disadvantaged/Minority Business Enterprise, City of Madison
- Disadvantaged Business Enterprise (DBE)
  - Wisconsin Department of Transportation
  - Illinois-Department of Transportation
- Minority Business Enterprise (MBE)
  - Wisconsin Department of Development
  - Wisconsin Supplier Development Council
  - Joint Certification Program, Milwaukee, WI

Copies of certification documents are available upon written request.

## 12.0 PREVENTIVE MAINTENANCE

Preventive maintenance (PM) is an organized program of actions (such as equipment cleaning, lubricating, reconditioning, adjustment and/or testing) taken to maintain proper instrument and equipment performance and to prevent instruments and equipment from failing during use. The purpose of PM is to increase reliability of data reported and reduce downtime. ORTEK's preventive maintenance program includes the following:

- Instruments, equipment, and parts that are subject to wear or deterioration without proper periodic maintenance.
- Spare parts that should be readily available to minimize downtime.
- Frequency that maintenance is required and documentation that it was performed.

Implementation of the preventive maintenance program is dependent upon the specific instrument and manufacturer. This manual does not designate specific PM for each instrument and equipment but lists in Table 10 the general practices that are applicable. The equipment SOP includes the PM specific to each instrument.

Each Section Manager is responsible that analysts properly conduct and document PM. Documentation must be recorded in each instrument or maintenance logbook.

**TABLE 10**  
**PREVENTIVE MAINTENANCE GUIDANCE**

<b>INSTRUMENT</b>	<b>ITEM CHECKED/SERVICED</b>	<b>FREQUENCY</b>
Atomic Absorption Spectrophotometer	Burner head	Each shift
	Electrical	Each shift
	Lamps	Each shift
	Nebulizer	Each shift
	Optics	During PM Service Calls
	Graphite tube	As necessary
	Replace graphite tube	As needed
	Replace contact rings	As needed
	Replace quartz windows	As needed
	Clean optics	As Needed
	Align background lamp	When changed
Gas Chromatograph	EC (Ni-63) wipe test	Semi-annual
	Clean detector	As needed or EC Semi-annually
		FID monthly
	Change column	As needed
	Change glass wool plug	Weekly
	Clean insert	Weekly
	Replace septum	Daily
	Gas purity check	Upon receipt of new cylinders
	Flow controller	Semi-annually
	Purge and trap	As needed
	Change fuses	As needed
	Reactivate external carrier gas filler dryers	Weekly
	Reativate flow controller filter dryers	Semi-annually
	Clean and silanize or replace glass liners on injectors	As needed or quarterly
	Clean Detectors a) ECD	As needed
	b) FID, Hall	As needed or annually
	Clean Purge Vessel	As needed or monthly
	Replace Purge Vessel	As needed
	Bake Trap	As needed
	Replace Trap	Semi-annually
	Replace carbon filter	Annually

TABLE 10 (Continued)

INSTRUMENT	ITEM CHECKED/SERVICED	FREQUENCY
ICAP	Sample introduction system Replace o-rings and water filters Clean optics Clean torch Change oil and dessicant Check electronics Clean, realign torch Clean nebulizer tips Clean mixing chamber Replace pump tubing	Daily As required As needed As needed Annually Daily As Required Daily As Needed Daily if left hooked up
Lachat Autoanalyzer	Clean and dry random access sampler Clean boats and check placement Clean sensor with cotton swab Spray proportioning pump with silicone, wipe rollers Check pump waste lines  Replace injection module flares  Clean unions, replace O-rings  Clean manifold fittings  Replace manifold O-rings  Rewrap coils  Clean and dry colorimeter Run "clean disk" in computer	Daily Daily Daily Every 50 hours, (2500 samples) Every 50 hours, (2500 samples) Every 500 hours, (25,000 samples) Every 500 hours, (25,000 samples) Every 500 hours, (25,000 samples) Every 500 hours, (25,000 samples) Every 500 hours, (25,000 samples) As needed Every 500 hours
Refrigerators	Temperature checked and logged	Daily
Balances	Service representative calibration	Annually

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TABLE 10 (Continued)

INSTRUMENT	ITEM CHECKED/SERVICED	FREQUENCY
Deionized/Nanopure Water	Conductivity check	Daily
	Ion exchange bed changed	Weekly
	Replace filters	As needed
GC/MS	GC/MS maintenance is the same as GC with the following additions:	
	Mechanical pump oil	Quarterly
	Power Con. air filter	Bi-Weekly
	QEM filter	Bi-Weekly
	Turbo pump oil	Semiannually
	Water filter (if applicable)	Observe and change as needed
	Computer air filter	Monthly
	Card cage air filter	Monthly
	Source-clean ceramics, polish lenses	As needed
	Clean poles and ceramics on the poles	As needed
	Clean contacts on the component boards	As needed
	Vacuum the component boards	As needed
	Clean all fan screens	Weekly
	Vacuum outside of instrument	Weekly
	Clean grob and replace quartz insert	As needed
	Replace septum	Daily (each shift)
	Injection port liner checked	Daily
	Column maintenance	As needed

TABLE 10 (Continued)

INSTRUMENT	ITEM CHECKED/SERVICED	FREQUENCY
Infrared Spectrophotometer	Clean cells	Daily
pH Meter	Electronics checked Electrolyte changed	Daily Checked weekly, changed when low



### 13.0 SPECIFIC ROUTINE PROCEDURES TO ASSESS DATA PRECISION, ACCURACY AND COMPLETENESS

The purpose of this section is to describe how data from the QC samples listed in Section 10.0 are treated to determine data quality. Data accuracy and precision are calculated as percent recovery or relative percent difference (RPD). Data completeness is calculated as the overall percent of blank spike samples in control.

#### 13.1 Data Precision Calculation

To determine the precision of the method and/or analyst, a routine program of sample duplicate analyses is performed. These may also be blank spike or matrix spike/matrix spike duplicate pairs. The results of the duplicate analyses are used to calculate the relative percent difference (RPD) which is defined as the difference (range) of each duplicate set, divided by the average value (mean) of the duplicate set, times 100 percent. For duplicate results  $D_1$  and  $D_2$ , the RPD is calculated from Equation 13-1:

$$RPD \% = \frac{D_1 - D_2}{\frac{D_1 + D_2}{2}} \times 100\% \quad (13-1)$$

When the RPD is obtained for at least 20 duplicate pairs, the average RPD and the standard deviation are calculated using:

$$\bar{m} = \frac{\sum_{i=1}^n m_i}{n} \quad (13-2)$$

$$S_m = \frac{\sum_{i=1}^n (m_i - \bar{m})^2}{n-1} \quad (13-3)$$

where

$m$  = the RPD of a duplicate pair,

$\bar{m}$  = the average of the RPD values,

$S_m$  = the standard deviation of the data set of RPD values, and

$n$  = number of RPD values used.

Control limits are calculated from these data as follows:

$$\text{Upper control limit} = \bar{m} + 3S_m,$$

$$\text{Lower control limit} = \bar{m} + 2S_m,$$

$$\text{Lower warning limit} = \bar{m} - 2S_m, \text{ and}$$

$$\text{Lower control limit} = \bar{m} - 3S_m.$$

Control charts are not kept for RPD statistics. Original limits are distributed to analysts and Section Managers by the QA Officer and updated at least annually by the QA Officer. CLP protocols specify that any out of CLP limit duplicates be qualified with an asterisk.

### 13.2 Data Accuracy Calculation

To determine the accuracy of an analytical method and/or analyst, a sample and blanks are routinely spiked. The results of matrix, matrix spike duplicate, blank spikes, and blank spike duplicates are used to calculate the quality control parameter for accuracy evaluation, the Percent Recovery (%R). Blank spike recoveries and method blank surrogate recoveries are plotted on control charts.

The %R is the observed concentration, minus the sample concentration, divided by the true concentration of the spike, times 100 percent:

$$\%R = \frac{O_i - O_s}{T_i} \times 100\% \quad (13-4)$$

where

%R = the percent recovery,

$O_i$  = the observed spiked sample or blank concentration,

$O_s$  = the unspiked sample or blank concentration, and

$T_i$  = the true concentration of the spike.

The true spike concentration is calculated from Equation 13-5:

$$T_i = \frac{\text{Spike Concentration (mg/L)} \times \text{Volume of Spike (in ml)}}{\text{Volume of Sample [in ml]} + \text{Volume of Spike [in ml]}} \quad (13-5)$$

When the percent recovery is obtained for at least twenty blank spike samples, the mean percent recovery and the standard deviation are calculated using the formulas:

$$\bar{\%R} = \frac{\sum_{i=1}^n \%R_i}{n} \quad (13-6)$$

and

$$S_R = \frac{\sum_{i=1}^n (\%R_i - \bar{\%R})^2}{n-1} \quad (13-7)$$

where

$R_i$  = percent recovery,

$\bar{\%R}$  = Mean percent recovery,

$MR_i = 1R_i - (R_{i-1}) \quad i = 2, 3, \dots, n$

$MR_2$  = average moving range of 2 successive recoveries,

$n$  = number of results, and

$d_2 = 1.128$ .

Control limits are calculated from these data as follows:

Upper control limit =  $\bar{\%R} + 3R_2/d_2$ ,

Upper warning limit =  $\bar{\%R} + 2R_2/d_2$ ,

Centerline =  $\bar{\%R}$ ,

Lower warning limit =  $\bar{\%R} - 2R_2/d_2$ , and

Lower control limit =  $\bar{\%R} - 3R_2/d_2$ .

Control charts are kept for blank spike and lab blank surrogate recoveries. All original limits are calculated by the QA Officer, distributed to Section Managers and analysts and updated at least annually by the QA Officer.

### 13.3 Data Completeness Calculation

To determine the completeness of an analytical method and/or analyst, blank spikes or method blanks spiked with surrogate compounds are analyzed. The

number of blank spikes (BS) or method blanks (MB) with recoveries within control limits are counted and assessed against the total number analyzed as follows:

$$\% \text{ Completeness} = \frac{\# \text{ BS or MB in control}}{\text{total \# BS or MB analyzed}}$$

(13-8)

#### 13.4 Data Set Assessment

When analysis of a project/batch is completed, the results will be reviewed as described in SOP OP-17 and evaluated in accordance with Figure 19. Briefly, review and evaluation are done for the items listed below in order:

1. Calibration results.
2. Holding times laboratory blank results.
3. Blank spike/lab control standard recoveries.
4. Surrogate spike recoveries.
5. Duplicate sample and Matrix Spike/MSD results.
6. Field/shipping QC results (trip blanks, field blanks and field duplicates).

#### 14.0 CORRECTIVE ACTION

Out of control conditions as documented on ORTEK's Out-of-Control Form (Figure 3) must be corrected. Corrective actions are to be logged by the QA Officer using the Corrective Action Log (Figure 21). All Out-of-Control Forms must be routed to the QA Officer for determination, if the client needs to be notified.

##### 14.1 Out-of-Control Conditions

An out-of-control condition is an unauthorized deviation from SOPs, methods, or a defect that could lead to the data quality not meeting client needs and/or internal QC checklimits. Out-of-control conditions may be caused by lab operations or field operations (documentation not complete, inadequate preservation) that are identified by ORTEK. Out-of-control conditions include, but are not limited to:

- Sample holding time exceeded.
- Sample preservation and/or pH not adequate.
- Sample receiving paperwork not correct.
- Detected analytes in blanks.
- Instrument calibration requirements not met.
- Sample storage requirements not met.
- Chain-of-Custody broken.
- Incorrect sample preparation/analysis used.
- Internal QC sample data outside limits.
- Data recording or transcription errors.
- Failure to document data.
- Data validation errors.

The affected samples/clients and batches are to be identified on the Out-of-Control Form and the QA Officer contacted immediately for consultation on appropriate resolution and responsibility.



## 14.2 Corrective Action

Corrective action is defined as the effective measure applied to correct and minimize the possibility of recurrence of an out-of-control condition. Examples of corrective actions include, but are not limited to:

- Recalibration.
- Preparation of new standards.
- Preparation of new reagents.
- Reanalysis of samples.
- Additional training of personnel.
- Client notification/consultation (i.e., improper sample preservation, insufficient volume).

## 14.3 Responsibility for Corrective Action

All employees are responsible for reporting out-of-control conditions that they observe or identify. The employee should initiate the Out-of-Control Form and give it to the Section Manager and sign the "Report by" line. They must also indicate under ACTION TAKEN, the person notified, and date. All original (golden rod) Out-of-Control Forms must accompany the project data and be included in the project file. A copy must be sent to the QA Officer to log into the Corrective Action Log for follow-up.

Each laboratory Section Manager is responsible for documenting and correcting problems that might affect data quality in accordance with the requirements of this section. The Section Manager is responsible for stopping work in the event of out-of-control situations, and notifying the QA Officer. With the QA Officer, the Section Manager is responsible for determining whether reported problems affect data quality, concurring with the proposed corrective action, and notifying the QA Officer that corrective action has been completed.

The QA Officer is responsible for reviewing Out-of-Control Forms, recommending or approving proposed corrective actions, maintaining an up-to-date corrective action log, verifying that corrective action has been completed, distributing and filing out-of-control forms and assisting in resolving disagreements. With the Laboratory Director and Section Managers, the QA Officer also is responsible for determining whether reported problems are serious enough to stop lab operations and establishing

schedules for completion of corrective action. The QA Officer is responsible for assisting in resolving disagreements and quality problems, and performing audits of the laboratory for compliance with the corrective action.

#### 14.4 Corrective Action Requested by External Auditors

Results of PE samples and audit reports are sent to affected Section Managers and the Laboratory Director by the QA Officer. If the sample results/audit identify deficiencies that require corrective action, the QA Officer will complete an Out-of-Control Form for each deficiency and log each into the Corrective Action Log. The QA Officer will request a turn time on the action and verify that action is taken in order to prepare a written response to the external auditor (if requested). All affected Section Managers will receive a copy of the response.

Upon notification by the external auditor of acceptance of the corrective action, the QA Officer will notify the responsible Section Manager and the Laboratory Director. If corrective action is not acceptable, the QA Officer will fill out a new Out-of-Control Form until the problem is satisfactorily resolved, at which time the closeout date is documented in the log. The QA officer will file the records pertaining to the out-of-control conditions with the external audit documents.

Out-of-control and required corrective action can also result from the ongoing laboratory review of lab by the QA Officer. These activities are discussed in Section 11.0.

A summary of out-of-control conditions will be reported monthly to the Laboratory Director. Corrective actions for out-of-control conditions that are detected after data have been reported must also be reported by the QA Officer to the Laboratory Director by a copy of written memos in response to client data verification requests or verbal data challenges.



**15.0 QUALITY ASSURANCE REPORTS TO MANAGEMENT**

If the performance of the laboratory is not reported frequently and concisely to ORTEK management, the effectiveness of the QA program is diminished. Reporting of internal and external systems, performance audits, out-of-control conditions and corrective actions taken are done through three means:

**15.1 Weekly Management Meetings**

Each week, all Section Managers, the Assistant Laboratory Director, Marketing Director, Laboratory Director, QA Officer and President meet to discuss laboratory operations and personnel issues. Items are solicited for the agenda prior to the meeting and minutes are distributed for the purpose of documenting responsibilities. At these weekly meetings the QA Officer transmits the status of audits, PE sample analyses, out-of-control conditions identified and results of client data challenges.

**15.2 Monthly Data Audit Reports**

The findings of the QA Officer's random project file review as described in Section 11 is transmitted monthly (by the 10th of the following month) to the Laboratory Director, President and affected Section Managers. A summary of out-of-control conditions reported each month are also included to enable Section Managers to assess continuing problem areas. Written results of client data challenges and verifications are also transmitted at least monthly to the Laboratory Director and affected Section Manager.

**15.3 Quarterly Internal Lab Audit Results**

The written findings of the QA Officer's quarterly audit of a section of the laboratory as described in Section 11 are transmitted to the Laboratory Director, President and affected Section Manager.

**15.4 Client Monthly Progress Reports/QA Reports**

Major government clients are provided with Monthly Progress Reports (MPRs) upon request, as provided for in the contract. These MPRs follow a format specified by the client. NEESA/HAZWRAP reports must include:

- Project name, number and contract/subcontract number.
- List of client sample numbers, ORTEK sample numbers, analyses requested.

- Date collected, date extracted and date analyzed.
- Copies of Chain-of-Custody Forms signed by ORTEK.
- New lab methods, equipment or changes in old methods.
- Changes in QA personnel or other personnel (resumes attached).
- Copies of Out-of-Control Forms and Corrective Action Log as they apply to specific project samples.
- Control charts pertinent to project samples.
- External audit results and corrective action plans and written responses.

## 16.0 DATA DELIVERABLES

The specific data and reporting format necessary is client dependent. DQO levels C,D, and E have a predefined list of data to be included as defined on Table 11. Other client deliverables, unless otherwise specified, consist of the analytical result sheet only. QA Summary Reports (Figure 22) are prepared for a fee by the QA Officer and should be requested by the client prior to sample analysis.

The completeness of data deliverable packages of level C,D, and E are to be checked by the assigned ORTEK Project Manager prior to release to the client. Noncompliant data packages are those with missing information as identified by the QA officer during random data audit review or by the client. The QA Officer will notify the affected Section Manager of specific missing items for resolution before resubmittal to the client.

TABLE 11

DATA DELIVERABLES - LEVEL C

Analyte Group	CASE NARRATIVE	CLP FORMS											CONTROL CHART			OTHER REQUIREMENTS
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI- XIV	MB	BS	LCS	
Volatiles- GC/MS	X	X	X	X	X	X	X	X	X				X			
Semivolatiles- GC/MS	X	X	X	X	X	X	X	X	X				X			
PCB-Pesticides	X	X	X	X	X	X	X	X	X	X				X		
Volatiles-GC	X	X*	X*	X*	X*		X*	X*					X			2nd column confir- mation data, initial and continuing response factors & % D from initial
Metals/CN	X	X	X	X	X	X	X		X		X	X			X	
Met Chemistry	X	X*		X	X*									X		%RSD from initial calibration

NOTES: MB = Method blank, surrogate recoveries charted

BS = Blank spike, recovery charted

LCS = Lab control standard, recovery charted

\* ORTEK to supply format for review by client.

TABLE 11

## DATA DELIVERABLES - LEVEL D

Analyte Group	CASE NARRATIVE	CLP FORMS											CONTROL CHART			OTHER REQUIREMENTS
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI- XIV	MB	BS	LCS	
Volatiles- GC/MS	X	X	X	X	X	X	X	X	X				X			Full CLP package
Semivolatiles- GC/MS	X	X	X	X	X	X	X	X	X				X			Full CLP package
PCB-Pesticides	X	X	X	X	X	X	X	X	X	X	X			X		Full CLP package
Volatiles-GC	X	X*	X*	X*	X*		X*	X*					X			As in Level C plus all chromatogram of samples, QC and standards, prep records
Metals/CN	X	X	X	X	X	X	X	X	X	X	X	X			X	Full CLP package
Wet Chemistry	X	X		X*	X*									X		As in Level C plus all absorbances, digest/prep logs and instrument printouts

NOTES: MB = Method blank, surrogate recoveries charted

BS = Blank spike, recovery charted

LCS = Lab control standard, recovery charted

\* ORTEK to supply format for review by client.

TABLE 11

## DATA DELIVERABLES - LEVEL E

Analyte Group	CASE NARRATIVE	CLP FORMS												CONTROL CHART			OTHER REQUIREMENTS
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI- XIV	MB	BS	LCS		
Volatiles- GC/MS		X			X								X				
Semivolatiles- GC/MS		X			X								X				
PCB-Pesticides		X			X									X			
Volatiles-GC		X			X								X				
Metals/CN		X			X										X		
Wet Chemistry		X			X									X			

NOTES: MB = Method blank, surrogate recoveries charted

BS = Blank spike, recovery charted

LCS = Lab control standard, recovery charted

\* ORTEK to supply format for review by client.



ENVIRONMENTAL LABORATORY

414-498-2222  
FAX: 414-498-4067

3096 West Main Street • P.O. Box 12000 • Green Bay, WI 54307-3433

## - QUALITY CONTROL REPORT -

To:

Attn:

Batch ID :  
 Our Lab # :  
 Your Sample ID:  
 Sample Matrix :

Report Date:

## COLLECTION INFORMATION

Dates:  
 Location:

Analyte	Lab Blank Conc.	Lab Duplicate RPD	Matrix Spike %Recovery	EPA Lab Control Standard RPD	Blank Spike %Recovery	Blank Spike Duplicate %Recovery	Sample Number used for QC

ND = NOT DETECTED  
 NA = NOT APPLICABLE  
 RPD = RELATIVE PERCENT DIFFERENCE  
 BS = BLANK SPIKE  
 BSD = BLANK SPIKE DUPLICATE

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Title: \_\_\_\_\_

## 17.0 REFERENCES

This section contains a list of references used during the preparation of this QAPM. For ease of reading, no footnotes or specific reference citations were used in the manual. These references are available from the QA Officer and ORTEK employees are encouraged to consult them to learn more about specific QA/QC policies.

F.M. Garfield, Quality Assurance Principles for Analytical Laboratories, Association of Official Analytical Chemists, Arlington, VA 1984.

US EPA Laboratory Data Validation Guidelines for Evaluating Organics Analyses, February 1, 1988.

US EPA Laboratory Data Validation Guidelines for Evaluating Inorganic Analyses, July 1, 1988.

US EPA Contract Laboratory Program Statement of Work for Organic Analyses, OLM01.1-.6.

US EPA Contract Laboratory Program Statement of Work for Inorganic Analyses, ILM02.01.

US EPA, "Guidelines and Specifications for Preparing Quality Assurance Program Plans," EPA QAMS-004/80, EPA-600/8-83-024.

US EPA, "Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans," EPA QAMS-005/80, EPA-600/4-83-004.

US EPA, "Guidelines for the Preparation of Standard Operating Procedures (SOPs) for Field and Laboratory Measurements," US EPA Region V, March 16, 1989.

US EPA, "Final Standard Quality Assurance Project Plan Content Document," US EPA Region V, June 1989.

US ACE, "Chemical Data Quality Management for Hazardous Waste Remedial Activities," Department of the Army, US Army Corps of Engineers, ER-1110-1-263, October 1, 1990.

US EPA, "Content Requirements for Quality Assurance Project Plan," US EPA Region V, January 1989.

DOE, "Requirements for Quality Control of Analytical Data," DOE/HWP-65/R1, July 1990.

US Navy, "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program," NEESA 20.2-047B, June 1988.



US EPA, Handbook for Analytical Quality Control in Water and Wastewater Laboratories, EPA-600/4-79-019.

US EPA, Data Quality Objectives for Remedial Response Activities, EPA/540/6-87-003.

US EPA, National Enforcement Investigations Center (NEIC), Example Standard Operating Procedures for CLP Laboratories, Revised 3-86.

US EPA, Handbook for Sampling and Sample Preservation of Water and Wastewater. EPA 600/4-82-029 and Addendum EPA-600/4-82-039.

US EPA QAMS, "Calculation of Precision, Bias and Method Detection Limit for Chemical and Physical Measurements," March 30, 1984.

J.U. Taylor, "Quality Assurance of Chemical Measurements," Analytical Chemistry, Volume 53, No. 14, December, 1981.

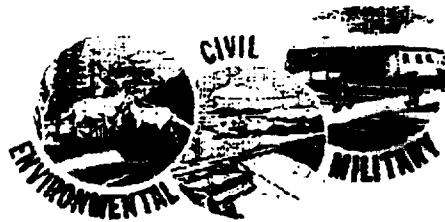
American Chemical Society, "Principles of Environmental Analyses," Analytical Chemistry, Volume 55, pp 2210-2218, 1983.

US EPA, Manual for the Certification of Laboratories Analyzing Drinking Water, EPA-570/9-82-002.

US EPA, Users Guide to the Contract Laboratory Program, December, 1988.

US EPA, Region V, "Central Regional Laboratory SARA/Superfund Sample Handling Manual," March, 1989.

US EPA, "Notes on Application of Practical Statistics to Environmental Measurements," December, 1983.



DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS, OMAHA DISTRICT  
215 NORTH 17TH STREET  
OMAHA, NEBRASKA 68102-1978

### FACSIMILE TRANSMITTAL HEADER SHEET

For use of this form, see AF 25-11, the proponent agency is ODASC4

COMMAND/ OFFICE	NAME/ OFFICE SYMBOL	OFFICE TELEPHONE NO. (AUTOVON/Comm.)	FAX NO. (AUTOVON/Comm.)
FROM: E. Liu	COE		
TO: D. Ate	WCC		(314) 429 0462
CLASSIFICATION	PRIORITY	NO. PAGES (including this header)	DATE-TIME MONTH YEAR
		4	12 2 93
REMARKS			

*[Handwritten signature]*

Space Below For Communications Center Use Only

DA FORM 3918-R, JUL 90

DA FORM 3918-R, AUG 79 IS OBSOLETE



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

FEB 03 1993

Gene Liu  
U.S. Army Corps of Engineers  
Attn: CEMRO-ED-ED  
215 North 17th Street  
Omaha, NE 68102-4978

Dear Mr. Liu:

U.S. EPA has reviewed the Draft Pre-Design Field Investigation (PDFI) Report. In general, the document was very well written; however the following comments must be incorporated into the document before it can be considered "final":

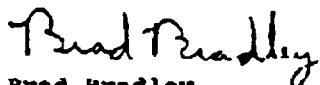
1. Page ES-4, Third Paragraph, third and fourth lines-the depths of excavation for Trust 454 and BV& G Transport, six feet and 15 feet, respectively, are excessive. The data would suggest excavation of these properties to approximately two feet followed by confirmatory sampling with further excavation as indicated by the analytical results. Whether to excavate deeper in the area of boring BV-002 should be decided after a TCLP test is run on the contaminated material in the deeper zone. This comment will greatly affect the estimate of excavation quantities for the Main Industrial Property.
2. Page ES-4, Last Paragraph - the statistical methods need to be discussed again between U.S. EPA, U.S. ACE, and Woodward-Clyde. It is true that U.S. EPA and U.S. ACE agreed to the statistical methods employed in the report; however, the example for Decision Unit #15 on page 59 raises some questions that need to be answered before the report is finalized.
3. Page 5, second line-insert "estimated" between "The" and "boundaries".
4. Page 5, Section 1.3-add a sentence after the first sentence as follows: "U.S. EPA wrote a letter dated January 10, 1989 which contained an addendum to the RI Report".

5. Page 5, Section 1.3 - add a sentence before the last sentence as follows: "On January 10, 1990, U.S. EPA released an addendum to the FS Report".
6. Page 9, Section 2.1.1, last line-insert "for the Main Industrial Property" between "standard" and "of".
7. Page 9, Section 2.1.1.1, line 3- "BV & G Transportation" is not the name of the company, it is "BV & G Transport". Please change this wherever it appears in the report.
8. Page 54, Second Paragraph - see comment #1.
9. Page 56, Section 4.1.2 - conclusions about the suitability of the "on-site" borrow material should be summarized in this section.
10. Page 59, Statistical Test example - see comment #2.
11. Page 60, sixth line - why is cultivated/uncultivated relevant? This needs to be resolved before the excavation soil volume estimates are accepted.
12. Page 61, section 4.3 - U.S. EPA will accept the soil volume estimates for the remote fill areas for the purposes of this report; however, it should be understood that these estimates may be in error because the criteria used by U.S. EPA in the Record of Decision were 500ppm lead or visual battery case material, not depth of fill material.
13. Figure 3 - Sand Road is mislabelled on this Figure. "Chain of Rocks Road" is the east-west road that is currently labelled as "Sand Road" on the figure. Sand Road is actually the north-south road that is approximately one inch from the right border of the figure.
14. General Comment - Is there a list of the appendices anywhere in the report? If not, please include such a list in the Table of Contents.
15. Attachment 1, Page 5, Section 1.3, Option A, first sentence - this must be discussed. The ROD called for "consolidation within the area of contamination".
16. Attachment 1, Page 8, Section 2.1, line 2 - delete "uncultivated" from this line.
17. Attachment 1, Page 8, Section 2.1, second sentence - it is U.S. EPA's intent to remediate soil from the easement area.
18. Attachment 1, Page 14, Section 3.2 - material from the remote fill areas will not be transported to the Main Industrial Property.

19. Attachment 1, Page 18, "Property Access" Row, "Time Required" Column - property access for residential areas will require 4 - 12 months.
20. Attachment 2 - this attachment is not necessary for the remote fill areas, but may be applicable to consolidation of contaminated materials on the Main Industrial Property (See Comment #15). Please change the title accordingly.
21. Attachment 2, Page 4, last sentence - provide an explanation of why the "non-process" materials will not be part of the study, or include these materials in the study.
22. Attachment 3, Page 2, last full sentence - the wording of this sentence is contingent on comment #15.
23. Attachment 4, Page 2, Second Full Paragraph, last line - replace "non-residential areas" with "the Main Industrial Site".
24. Attachment 4, Page 2, cluster of three bullet points - for the first bullet point, where is the explanation for the estimate of 290,500 cubic yards? Second bullet point - as stated previously, this estimate is too high. Third bullet point - delete this statement - this material will be disposed of off-site.
25. Attachment 4, Page 5 last paragraph - rewrite this paragraph to preclude the use of subgrade soils from the SLLR site. These soils may be contaminated, and what would be used to replace them?

This is the final comment letter regarding the draft PDRI report. I am available to participate in a meeting or conference call to discuss comments #2 and #11 and any other comments you may wish to discuss. Please contact me at (312) 886-4742 to arrange a meeting/conference call.

Sincerely,



Brad Bradley  
Remedial Project Manager

cc: Brian Kulnan, IEPA

To: Gene Liu CEMRO-ED-ED  
From: Sandy Frye CEMRO-ED-EH  
Re: NL/Taracorp Draft Final Predesign Sampling Report  
Date: 29 Oct 92

Review Comments:

1. General Comment.

As per our discussion on 28 Oct 92, it is my understanding that the ROD for this site will probably be reopened due to recently detected lead contamination of the groundwater in excess of 50 ppb and as such the agency will require removal of the slag piles and other sources of contamination rather than capping of said materials. In light of this, the sampling report seems to adequately address issues pertaining to delineating the extent of the contamination. If the EPA determines that consolidation and capping of the soil is still appropriate, then other issues need to be considered. Some of these issues are presented in the comments that follow.

2. Attachments Volume, Section 1.3, page 5.

Keep in mind that the EPA has issued the final rule for solid waste disposal facility criteria (Federal Register, Oct 9, 1991) and that part or all of the new sections 40 CFR 257 and 258 may apply to the consolidation area.

3. Attachments Volume, page 1, second paragraph.

Two weeks does not seem to be an adequate amount of time in which to expect local governing bodies to review a scope of work for remedial activities. If the ROD is reopened, this should not be a factor as an additional period for public comment will be required.

4. Volume I, page ES-5.

Here and elsewhere in the document an MCL for lead of 50 ppb is referenced. The MCL for lead is no longer 50 ppb and the document needs to be corrected accordingly.

11-2-92

To: Gene Liu

From: Colleen Cleary, (Temp.)

Subject: Draft Final Report: NL/TARACORP; Superfund Site; Granite City, Illinois; WCC Project # 89MC114V; October 1992

Date: October 20, 1992

1. p. ES-4 First paragraph under Conclusions and Recommendations. "Decision Units" needs to be defined here as well as in the actual Report.
2. p. 18 2.1.5 First paragraph, last sentence. Please correct and clarify this sentence to read "The initial address information provided to WCC by the USEPA...".
3. p. 59 The equation used to find P should be included in the text. Clarify where the numbers came from.
4. p. 85 4.4.1.4 Pesticides & PCBs The first sentence should read: "Pesticides & PCB constituents analyzed for in groundwater samples are included in Table 9."
5. General spelling corrections:
  - p. ES-4 Top paragraph, last sentence. Correct "were" to "was".
  - p. 43 3.1.2 Third paragraph, last sentence. Correct the spelling of consistent.
  - p. 71 Third complete paragraph. Correct the second sentence to read "area".
  - p. 74 Fourth complete paragraph. First sentence should say "battery".
  - p. 77 First paragraph, first sentence. Same as previous correction.
6. Table 17 The total for the QC Samples needs to be recalculated. According to my calculations the number is 767 not 759. Since this changed, the total WCC Samples column will also change. The total there should be 5778.
7. The Table of Contents does not match up with the document. In some cases it is only the outline number and page number that is wrong, in other cases it is the order that it is wrong. This needs to be corrected.

11-2-92

To: Gene Livi

From: Colleen Cleary, (Temp.)

Subject: Draft Final Quality Control Summary Report; NL/TARACORP; Superfund Site; Granite City, Illinois; WCC Project # 89MC114V; October 1992

Date: October 23, 1992

1. Table 9      The total QC Samples column for total lead should be 767 (according to my calculations) not 759. Since this total changed, so will the column labelled Total WCC Samples. It will change to 5778.
2. Table 2 and p. 28      There is confusion as to where the totals came from that are referred to on p. 28. All of the totals should be checked.
3. p.53 and p. 54      6.2.2      The first sentence of this paragraph is missing.
4. General spelling corrections:
  - Table 11- Madison 1316 should read Gravel Lot
  - p. 32      4.5.3.3      Second paragraph, third sentence. It is USACE-MRD laboratory





COMMENTS ON DRAFT TREATABILITY STUDY  
OF REMOTE FILL AREAS  
NL/TARACORP SUPERFUND SITE  
GRANITE CITY, ILLINOIS

Reviewer: M. Roth

1. Page 4, Last Sentence. Have the lab determine what to do with these materials (solidify as is, shred and solidify, wash, place under cap as is, etc.)
2. Page 5. Second Sentence. Typo. "Allow" instead of "Allows."
3. Page 7. Add to Chemical Test List, "5.7 RCRA Total Metals."
4. Page 8. First Paragraph, Second Sentence. In order to cut down on the number of treatability tests, it may be in our best interest to do a complete mix design series on the worst case (most highly contaminated) fill. Then, confirmatory tests could be run on the fills from other locations, based on the determined optimum design mix.
5. Page 9. Second Paragraph, First Sentence. Typo. Should be "sections."
6. Page 9. Third Paragraph, First Sentence. Typo. Should be "set of."
7. Page 13. Cone Index. Typo. Should be "bearing."

Reviewer: G. Mellema

8. General. Please provide a sketch indicating locations of sampling sites. A sketch should also be required to be a part of the Work Plan Submittal.
9. Page 8. Third Paragraph, First Sentence. If possible, indicate here and on Table 1 what sample size (volume, weight) is required to complete the testing requirements. Sample size requirements should also be a part of the Work Plan Submittal.

Reviewer: S. George

10. Include provisions to collect more sample if results of the chemical testing indicate the waste is not hazardous.
11. Include provisions for further analysis on the selected few alternatives that work to determine the best ratio. These tests should not be performed on the most extreme ratios that are already known to be the maximum stabilized form. The additional, more stringent TCLP tests recommended should mimic conditions of a landfill and should be performed on the middle of the road mixtures.
12. Explain how oil and grease will be handled if it appears to be a problem. Since most of these areas are in a location where traffic or dust control suppressants may have contributed oil to the fill material, oil and grease as a possible interference should be considered.

28 October 92

NL/Taracorp  
Superfund Site  
Granite City, IL

1. The following are comments and questions on the Draft Final Report (October, 1992) prepared by Woodward-Clyde Consultants.

(1) Page ES-4. How many additional samples are required from the BV&G property? Who will take them and when?

(2) Page ES-4. Additional TCLP lead analysis is recommended. Who will do this and when?

(3) Page ES-4. Will we order study of additional areas around the outer boundary of the study area?

(4) Page ES-5. Will we do more sampling and testing in the area around 3108 Colgate Avenue?

(5) Page 56, Para 4.1.1. Should the Trust 454 and Rich Oil properties be excavated to a uniform depth of six feet or should the depth vary according to the sampling results? If the depth varies, can a map be prepared which shows the various depths of excavation?

(6) Page 60, Para 4.2. Is additional TCLP testing of residential area soils going to be done to determine if they will require stabilization?

Danny Klima  
CEMRO-ED-DJ  
(402) 221-4429

**Woodward-Clyde  
Consultants**



Engineering & sciences applied to the earth & its environment

89MC114V

March 3, 1993

Mr. Eugene Liu  
U.S. Department of the Army  
Corps of Engineers, Omaha District  
215 North 17th Street  
Omaha, NE 68102-4978

Subject: Comments from Mr. Danny Klima of USACE on Draft Final Report  
for NL/Taracorp PDFI

Dear Mr. Liu,

As we briefly discussed on February 16, 1993, during the three way conference call between USACE, USEPA, and WCC, we do not feel that we are in a position to address the comments on the draft report made by Mr. Danny Klima.

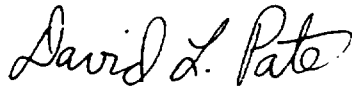
Mr. Klima raises some issues that need to be resolved as the project moves to the remediation phase. However, we believe that it would be more appropriate that these issues be addressed by the USEPA. For Questions 1, 2, 3, 4 and 6 (see attached), we feel that we can point out the need for additional sampling and testing, but the scope of the additional work needs to be decided by the USACE and/or the USEPA. There would be a considerable amount of time and effort involved in quantifying the number of additional samples and analyses required, which we feel is beyond our current scope of work.

With Regard to question 5, additional sampling would be required to generate an accurate map deliniating the excavation depth across the site. In light of USEPA's suggestion that the Main Industrial Property be excavated to a uniform depth of 2 feet, followed by a round of confirmation sampling, such a map becomes a moot point.

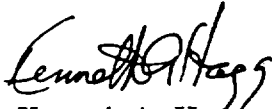
**Woodward-Clyde  
Consultants**

If you feel that additional discussion of these specific issues is needed prior to finalizing the report, please let us know. We will be available for a conference call to discuss treatment of any of the issues raises by Mr. Klima.

Very truly yours,



David L. Pate  
Project Geologist



Kenneth A. Hagg  
Associate

attachment (1)